



PRECISION
TESTING
SOLUTIONS



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About Us

Established in 1872, James Heal is an international engineering company renowned worldwide for delivering premium quality, reliable and innovative materials testing solutions.

From its core manufacturing and commercial headquarters in the United Kingdom, the company specialises in the design and production of Testing Instruments and Test Materials (consumables) supported by industry-leading Service and Support.

At the core of our company is the seamless interaction between high quality and precision combined with innovation, imagination and industry-leading technical expertise. This philosophy enables James Heal customers across the world to generate test results with the highest levels of accuracy, reliability and reproducibility and explains why James Heal has become THE supplier of choice in materials testing solutions.

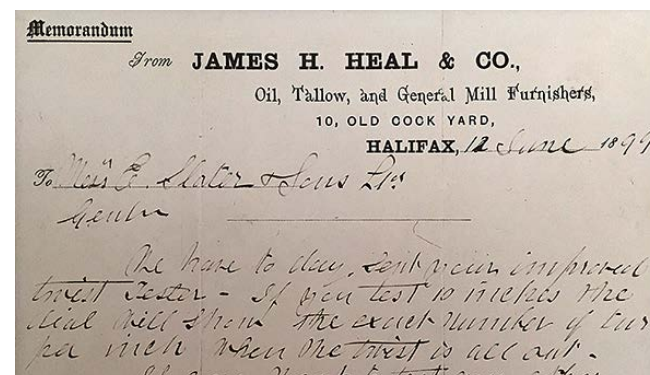
History

Over the decades James Heal has established itself as the leading supplier of premium textile testing instruments and test materials, delivering the most user-intuitive and innovative solutions throughout its more than 140 years of existence.

From its beginnings serving the needs of the local woollen textile industry to collaborating closely with Dr. Martindale to design one of the first Martindale Wear and Abrasion test instruments in the 1950s, James Heal has developed a reputation for expertise and has shown an ability to evolve in-line with market trends and customer requirements and expectations to remain a pioneer in its field.

This knowledge and expertise has in recent times evolved into non-textile applications, with the company working closely with some of the biggest names in the Rubber, Paper, Wood, Plastics and Glass industries to develop first-rate materials testing solutions.

A delivery note from 1899 shows evidence of the early manufacture of testing instruments.



Innovation

Our passion for testing is sparked by imagination and fuelled by expertise. Indeed this passion for new ideas characterises the way we work with each other, with our customers and with our partners. To provide the most innovative solutions that solve even the most complex and challenging materials testing problems we put the user at the forefront of our Testing Instrument design process, combining intelligent and intuitive user interfaces with the best in instrument functionality, reliability, safety and aesthetics.



Quality

Quality is an integral part of the James Heal DNA. Operating according to ISO 9001 quality standards, our vertically integrated, UK-based production facilities enable us to have complete control over production parameters and quality to provide customers with the reassurances they are looking for from a premium supplier.

Furthermore, James Heal offers Service & Support services delivered by some of the most experienced and well-trained engineers in the industry, supporting our customers worldwide and optimising instrument life cycles for maximum return on investment.



Significant investment into CNC technology further improves the quality of our machined components.

Touchscreen User Interface

In October 2016 we launched our new Touchscreen User Interface which is currently being rolled out across the complete James Heal core Testing Instrument range. It has been designed to dramatically improve the efficiency and productivity of Textile Testing Laboratories by delivering the best in user-intuitive design and functionality.

In delivering this innovation we worked closely with our in-house team of textile technology experts, and collaborated with some of the most influential Textile Testing Laboratories across the world to really understand the critical challenges that they face each day. This invaluable input enabled the creation of a touchscreen controller with intuitive, simple and clear navigation, and a 'homescreen' that displays all the key information, currently with a choice of 9 different languages.

At James Heal we are continuously looking at ways to provide value-add to our customers by providing innovative solutions that not only help to solve their most critical challenges but also enhance the user experience. The new Touchscreen User Interface typifies this philosophy perfectly.

Close To Customers

The James Heal network spans the globe, ensuring that customers benefit from the flexibility and reliability of having both technical and commercial contacts readily accessible in their local markets, as well as directly from James Heal in the UK.

Our local specialists speak the language of our customers and business partners and understand the service and on-site requirements of their markets.

They are also deeply ingrained in the James Heal culture, drawing on our world-leading expertise in technology, innovation and quality to support customers in the more than 70 countries in which we operate.



Martindale

ABRASION & PILLING TESTER

The James Heal abrasion and pilling tester, with the adaptability to test a wide range of applications, is the instrument of choice for many of the world's leading laboratories and global retailers.

MODEL NO.: 1609 [9 Station] / 1605 [5 Station] / 1602 [2 Station]

Martindale Series - Abrasion & Pilling Tester

Designed specifically for users, the new intuitive touchscreen user interface will ensure that the James Heal Martindale is the most simple to use and efficient instrument in the market.

The instruments offer easy access to every station from the front which reduces time to load and unload. The largest model, the Maxi-Martindale also has a hinged top plate to allow the users to access each of the 9 stations without having to lift off the top plate.

The touchscreen on all models is intuitive and user-friendly to enable quick and easy set up.



The Mini-Martindale 1602 is supplied as standard with 2 working positions.



Accessories are available with the Martindale for sock abrasion to EN 13770.



To accommodate mid-level use, the Midi-Martindale 1605 is equipped with 5 stations

The 1600 Series is available in three sizes to accommodate different levels of testing; the 2 station Mini-Martindale, the 5 station Midi-Martindale and the 9 station Maxi-Martindale 1609.

A comprehensive range of accessories are available for different specimen types, including sock abrasion, line contact plate and leatherball plate.

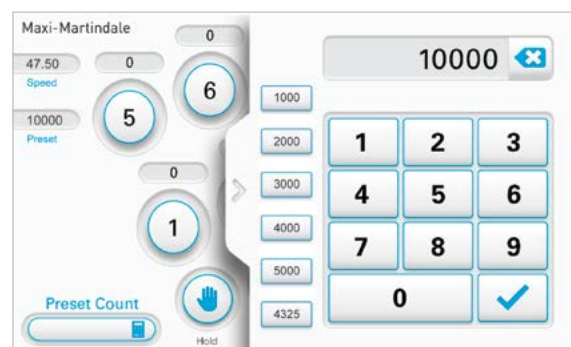
Our Martindale instruments conform to the requirements of all known international standards and retailers' test methods, including EN ISO 12947 Series and EN ISO 12945-2.

Martindale with Touchscreen User Interface

Our designers worked closely with users and our textile technologists in our own working laboratory to produce an intuitive touchscreen user interface which makes the Martindale easy to control. The different features are easy to access and navigation is quick, which ensures the set-up of a test is very simple. As the familiar feel of a touchscreen is similar to devices used in everyday life, users become experts instantly.

Key Features

- Minimal training time and increased user efficiency, as the touchscreen is totally intuitive
- A toughened glass cover which stands up to laboratory wear and tear including scratches and dropped weights
- A more enjoyable user experience - clear icons make setting up testing quick and simple



Quick and easy to set a test

Clear, easy to use controls enable setting up any test is very quick. Any user can pick up the process quickly as the screen is instinctive and intuitive, minimising training time.



End of test visibility

The display shows the Test End time and a progress bar, which allows the user to leave the instrument to work on other tasks and return on completion, a more efficient use of their time.



Control over individual stations

Individual totalising station counters and an individual hold function give the user the ultimate control over each station when testing, allowing them to use the instrument to exactly meet their testing needs.



Easily accessible settings

Settings for brightness, volume, date, language and motor speed can all be easily accessed from the top menu bar.

Martindale Languages

The Martindale Touchscreen User Interface can be set in a total of 9 different languages, which can be accessed via the Settings menu. This further complements how easy the Martindale is to use, enabling the user to work with a language they understand. Languages currently available are English, Chinese, Spanish, German, French, Italian, Hindi and Turkish.

Applications

Through a range of kits, accessories and test materials, users can adapt the Martindale to test many different products in this one versatile instrument.



Textiles



Socks



Leather



Carpets



Coated Upholstery



Edges

Options

In addition to the various tools available for the Martindale there are options, on our 2 station model, for our customers to pre-select from a range of attachments enabling us to build and provide an instruments to meet their specific testing needs.

This offers an ideal opportunity for research and development institutions and for companies who do not have a recognised test method for their product.

Customers can pre-order the instrument to be built with different attachments, for example the picture on the right shows an instrument with one station set-up to test Wood while the second station is ready for testing Textiles. Details of the various options are on the next two pages - contact James Heal to custom build to your requirements.



Martindale Attachments

Wet & Damp Testing

This option, which can be seen on the right, is designed for those products for which the performance standard requires the sample to be tested wet or damp.

To test the abrasion resistance properties, for example, of products which are required to resist, to some degree, the penetration of water such as footwear, waterproof garments and water-resistant garments. It can also accommodate testing if there is a requirement for the product to be fully submerged. The bath is equipped with a hose and a valve to enable easy drainage.



The **water bath** option is used to test products while damp or fully submerged in water.

Belt and Cord Assembly

This option (image on the right) is specifically designed to test the abrasive properties of multiple types of cord and belting. This includes products such as shoelaces, rope, cord, straps, cables, tape, webbing and belts.

To test these products a table is attached across the base plate of the instrument onto which plates are fitted. These plates are grooved to hold the sample in place.

Once the sample is in place, a clamp holds it in position ready for testing. If the sample breaks during the testing process a dead weight tensioning system activates a micro-switch to stop the instrument. This prevents the plates abrading against each other and also shows the number of rubs to failure.



A table assembly is attached across the base plate to test abrasive properties of multiple types of **straps, ropes and shoelaces**.

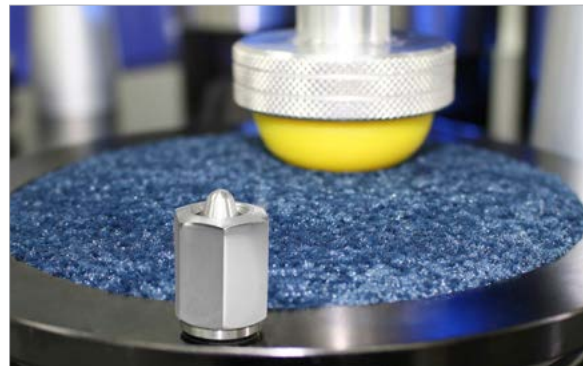
Thick Samples

The design of this Martindale option enables tests for the resistance to abrasion of thick samples to be undertaken on products such as carpets, leather, shoe components and vinyl.

We offer a choice of abrasives such as rubber sheet or hexapod studs as specified in ISO 11856.

This option also complies with standard BS EN 1813 for carpet testing in which a calculation of the weight loss after 5,000 rubs is specified.

The intuitive touchscreen user interface enables the number of revolutions to be predetermined, in addition to the total number of rubs.



Two different testing options are available for **thick samples**; ISO 11856 and EN1813.

Martindale Attachments: Non-Textiles

Lacquers & Coatings

This option is to test the colour fastness and abrasion resistance on printed matter upon which a lacquer or coating has been applied.

The quality of products such as card, brochures, flyers and painted parts can be affected by specific properties of ink, the paper or card and lacquers and coatings. Damage can potentially occur throughout the production process.

Consequently testing for rub colour fastness and abrasion resistance is vital to printers, lacquer manufacturers, producers of ink, coatings and associated substrates. This option enables companies to create their own internal quality standards for their products.



After testing the specimen mounting plate can be taken to an assessment cabinet without the need for further handling.

Wood & Laminates

Our knowledge of over 50 years of Martindale production combined with the expertise of the prestigious Institut für Holztechnologie Dresden (Institute for Wood Technology) has resulted in this innovative process.

This option tests the resistance to abrasion of a range of materials including wood floors, high pressure laminate and furniture surfaces.

The circular motion provides multi directional scratching, offering results more representative of the actual end-use than other methods in the market which scratch the surface in a straight line only.



Fully compliant with EN16094, once tested the results are simple to grade.

Liquids, Sprays & Powders

This option has a removable table which is affixed using pins embedded into the base plate of the Martindale (as illustrated on the right).

This offers the flexibility to apply liquid, sprays or powdered products onto the specimen material, such as fabric, and for it to be positioned and secured within the sample holder, away from the instrument.

Once the required test is complete, the sample holder, together with the specimen, can be completely removed without disturbing the specimen and taken away for assessment.



The removable table enables specimen material to be positioned and secured away from the instrument.



ProMace

MACE SNAG TESTER

The ProMace is designed to rapidly determine the snagging resistance of fabrics in normal wear.

Mace snag testing is used for testing robust apparel, including military uniform and fabrics used for automotive seating and commercial and home furnishings.

ProMace is compliant with the VDA 230-220, ASTM D3939 and JIS L 1058 standards.

MODEL NO.: 1522

ProMace - Mace Snag Tester

The unique design of the James Heal ProMace offers a significant reduction in the threat of the pin points breaking. This provides the user with more accurate and consistent results.

The vertical 2 x 2 configuration of ProMace provides a significantly smaller footprint in comparison with other mace snag testers, creating a saving of over 50% of laboratory bench space.



The four sample holder cylinders are removable to make the fitting and drying of the felt sleeves extremely easy. This also aids the mounting of samples.

When not in use the Mace balls are stored in non-contact mace ball holders designed to remove the risk of pin damage.

Safety - a key component

A hinged interlocked safety guard prevents the instrument from operating when opened, enabling tests to be performed in safety.



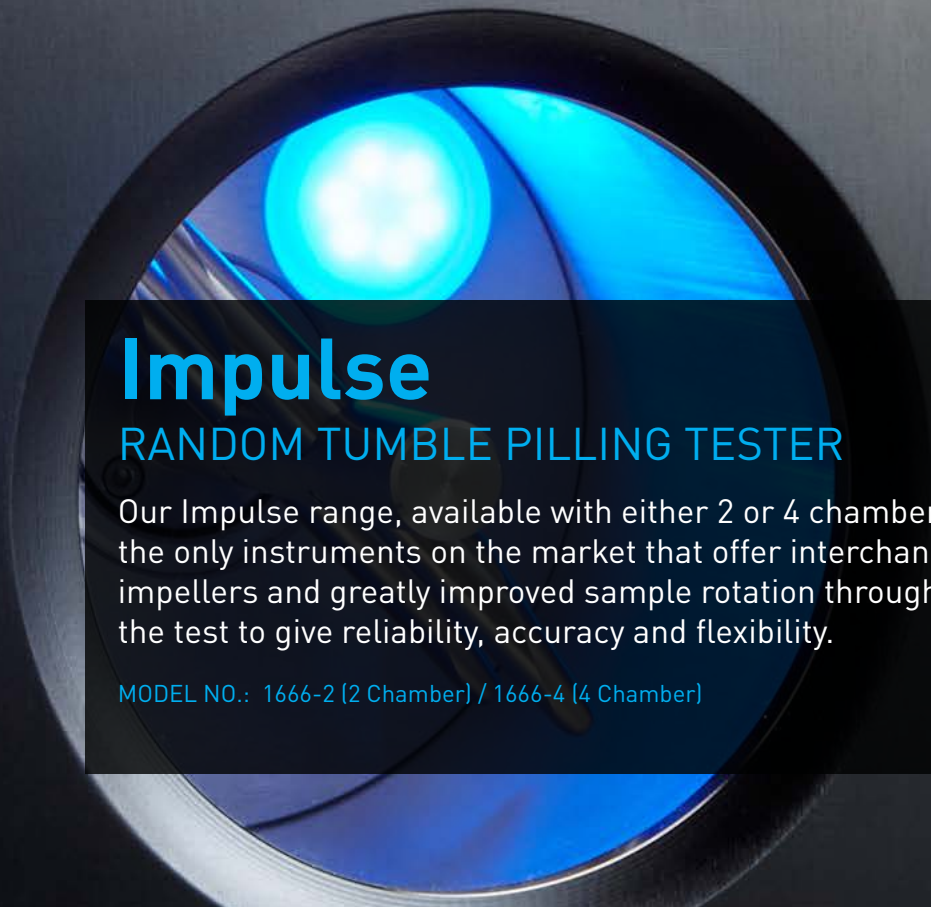
The Mace Ball Holder holds the mace ball safely and securely for inspection of the points for wear or damage as specified in VDA 230-220.



The intuitive Touchscreen User Interface has been specifically designed to ensure ease of use and to minimise training time.



The library of images on ProView include those to grade tests from the ProMace, Martindale, Orbitor and Impulse.



Impulse

RANDOM TUMBLE PILLING TESTER

Our Impulse range, available with either 2 or 4 chambers, are the only instruments on the market that offer interchangeable impellers and greatly improved sample rotation throughout the test to give reliability, accuracy and flexibility.

MODEL NO.: 1666-2 (2 Chamber) / 1666-4 (4 Chamber)

Impulse - Random Tumble Pilling Tester

Impulse, available as 2 and 4 chamber instruments, is designed to meet a broad range of standards. Specimens are agitated in a cylinder by a high-speed impeller, and are subsequently evaluated by reference to photographic standards.

The improved design on this instrument means that specimens are significantly less likely to fall during testing. The impellers rotate at 1200rpm to agitate the specimen and keep it tumbling.



The touchscreen user interface is intuitive with minimal training required, allowing testing to be carried out quickly and simply.



Interchangeable impellers enable tests to be carried out in accordance with ASTM, JIS and other standards.



The air circulation is specifically engineered to keep the specimens tumbling for the duration of the test.

Long life LED technology illuminates the chambers allowing the user to clearly view the testing through a window, and two dust extraction units at the rear of the instrument collect lint and loose fibre to keep the working area clean.

Neoprene liners are available for ISO 12945-3 and as they are reusable there is no need to change them after each test. This results in a reduction of downtime.

Orbitor

PILLING & SNAGGING TESTER

Available in two and four station models, Orbitor is a consistent and reliable way to test the pilling and snagging properties of woven and knitted fabrics.

MODEL NO.: 1616/2 [2 Station] / 1616/4 [4 Station]

Orbitor - Pilling & Snagging Tester

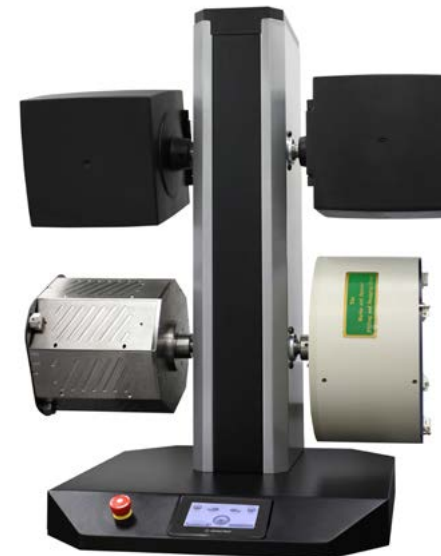
Suitable for testing a range of standards and retailer test methods, including BSi, ICI, EN, ISO and The Woolmark Company, Orbitor is a flexible instrument to which you can add different test boxes, drums or chambers depending on the type of testing you wish to carry out.

Any combination of pilling or snagging boxes can be used on both the two and four station models, to save time in between tests.

Improved safety features mean that the tumbling motion starts slowly to prevent user injury, and a torque limited motor stops if it detects any signs of resistance.



Simple and intuitive, the touchscreen is quick and easy to learn which minimises training time.



The magnetic qualities of the cork liners mean increased stability and tool-free fitting.

SnagPod®

James Heal led the development of the SnagPod® to solve the problem of testing for undesirable loops on the surface of garments, for which a suitable method did not exist.

The chamber is octagonal in shape and incorporates four pinned snagging bars, which are inclined forwards in the direction of rotation.

The SnagPod® design creates a gentler snagging test that provides consistent results which are more accurate to real life. It is ideal for testing lingerie and sports fabrics, such as football shirts.



Developed with the support of prominent retailers and test houses, SnagPod® provides a more realistic method for evaluating snagging.

ProView

UNIVERSAL ASSESSMENT VIEWER

ProView makes the process of grading samples easy and efficient with access, via a swipe of the integrated touch screen, to a library of photographic assessment images.

MODEL NO.: 1523



ProView - Universal Assessment Viewer

ProView is a simple way of assessing and grading samples - all of the images are readily available within a preloaded library, eliminating time spent locating and setting up physical photographs. Everything you need for visual assessment is housed within this easy to use viewer.

The library of photographic assessment images can be used to grade results from various test methods. The images preloaded into ProView are listed below:

- ASTM D 3939 Mace snagging (9 images).
- SnagPod; BS 5811:1979 & M&S - Woven (5 images), BS 5811:1979 - Single jersey (5 images) and BS 5811:1979 - Double jersey (5 images).
- Martindale: SM50 for woven fabrics - Martindale (20 images), EMPA
- Pilling Box: SM54 for knitted fabrics - Pilling box (20 images)

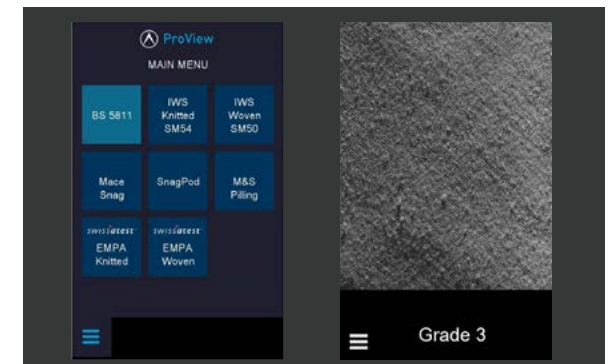


EMPA Pilling Standard Photographs

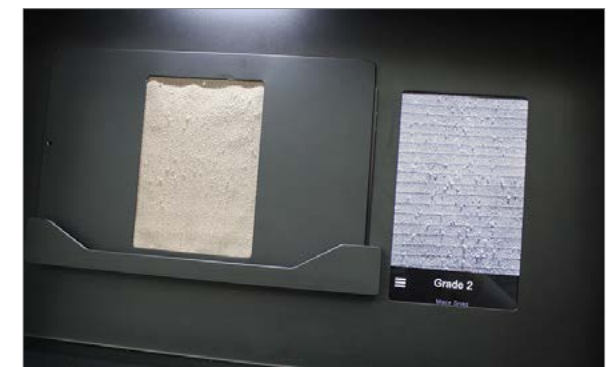
James Heal have entered into an exclusive agreement with Swisstat Testmaterialien AG who own the so-called EMPA images. Pilling Standard Photographs for EMPA Woven and Knitted standards are preloaded into the ProView to increase the range of images available.



A range of sample holders and masks make the process of assessing and grading the samples clear.



An easy to navigate menu leads to an extensive range of photographic standards.



Everything you need for visual assessment is housed within this easy to use viewer.

Titan Range

UNIVERSAL STRENGTH TESTERS

The new 10kN capacity Titan10 dual column crosshead Universal Strength Tester complements our 5kN capacity tester and can test a diverse range of applications including yarns, fabrics, seams, shoes, ropes, straps and many more.

MODEL NOS.: 1410 (5kN) / 1710 (10kN)

Titan Range - Universal Strength Testers

Designed for accuracy, efficiency and ease of use. Free upgrades* of the simple to use TestWise software containing over 500 pre-loaded standards, a hand-held controller, automated test set-up and a wide range of interchangeable tools.

* With a TechSmart™ support agreement.

Increased Capacity

In addition to our well established 5kN model, our newly introduced 10kN (1000 kgf and 2200 lbf) bench top, universal strength tester offers laboratories the opportunity to increase the diversity of product and scope of tests that can be accommodated with load cells ranging from 100N to 10kN.



Compression and Strength tests up to 10000 newtons with the Titan10 and up to 5000 newtons for the Titan5.



Dual Column

Dual column, crosshead instrument to test larger samples across a full range of tests including tension, compression, stretch and recovery, tear, peel, adhesion peel and other applications.

It has a vertical test space of 1200 mm[^] and a space between columns of 460 mm.

[^]from base to underside of crosshead



Hand-held controller is especially useful when positioning and gripping specimens of variable or irregular size.



The simple and tool-free process for changing the jaw faces is one of many features of our Titan instruments to enhance ease of use.

Titan10 - at a glance

CAPACITY - 10kN

Bench top, universal strength tester offers laboratories the opportunity to increase the diversity of product and scope of tests that can be accommodated with load cells ranging from 100N to 10kN

QUICK CHANGE LOAD CELLS

The potential to increase efficiencies and laboratory through-put

SOFT CLOSE JAWS

When loading a sample, the jaws will initially apply very light pressure, sufficient to grip the sample but not to cause damage to fingers

INTERCHANGEABILITY

The large array of grips and load cells are interchangeable between Titan5 and Titan10

QUICK CHANGE JAW FACE

Changing the jaw faces is tool free and is a very simple and efficient process



CUSTOMISED STANDARDS

Along with over 500 pre-loaded standards, TestWise 2017 allows the user to customise and save their own standards

DUAL COLUMN

Dual column, crosshead instrument to test larger samples across a full range of tests including tension, compression, stretch and recovery, tear, peel, adhesion and other applications

MANUAL CONTROL

Flexibility to allow the operator to control the instrument manually through the hand-held controller, the SMART button or on the screen

AUTOMATIC JAW SEPARATION

The jaw separation is automatic and the distance calibrated. The process is repeatable and precise as human error is eliminated from this operation

HAND-HELD CONTROLLER

Enables 'at instrument' control for effortless sample loading.

Especially useful when positioning and gripping specimens of variable or irregular size

AUTOMATIC PARAMETERS SETUP

TestWise automatically sets up the test parameters of the selected Standard.

Time to start the test is reduced, and as the parameters are preloaded, human error is eliminated. Increased accuracy and reliability is achieved

Titan is a flexible instrument with a wide range of tooling, with just a few examples of the range featured below. We have the expertise to consider special grips and modified software on request.



OctoGrip

OctoGrip has 8 claws for gripping small attachments



Stud Strength (T24)

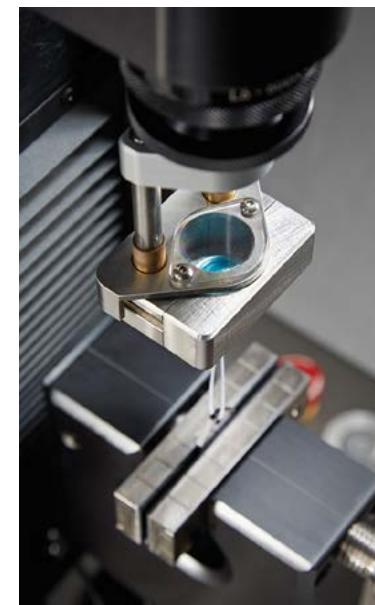
Suitable for testing buttons and tack-buttons (studs)



Security of Attachments (T12)



Puncture Test (EN 388)



Button Strength (T4)

Testing buttons to destruction and the security of attachment. Includes integrated debris shield.



Compression Test (T20B)

TestWise - Advanced software made simple

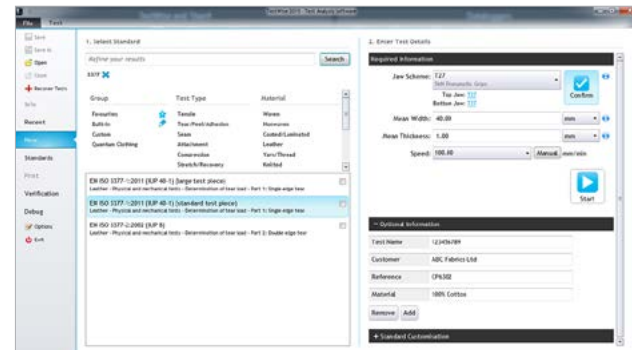
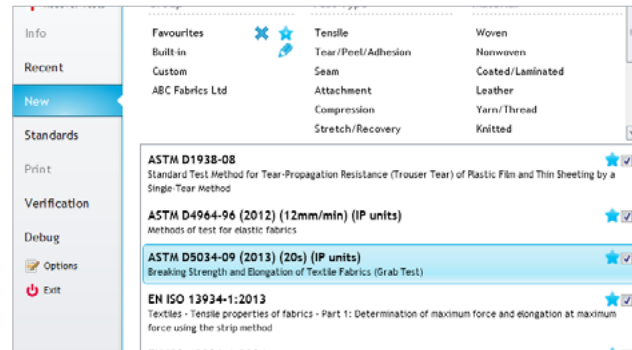
TestWise is a specially developed test analysis software that complements our Titan range of Universal Strength Testers. The excellent features of the software make the testing process easier, which increases laboratory efficiencies and result accuracy.

TestWise is an integrated application with no additional modules required. The simplicity of the software means you can start testing in only three clicks. Additional benefits include a features for quick manual testing, to allow for production line quality control and a function to generate a PDF test report with one click of a button

Extensive Standards Library

An expanding library of over 500 preloaded standards and test methods, including new and current versions as well as many older standards which have been superseded but are still widely used, are included as part of the TestWise package.

TestWise includes a "Standards Editor" which allows you to customise existing Standards and create new ones which meet more specific requirements.

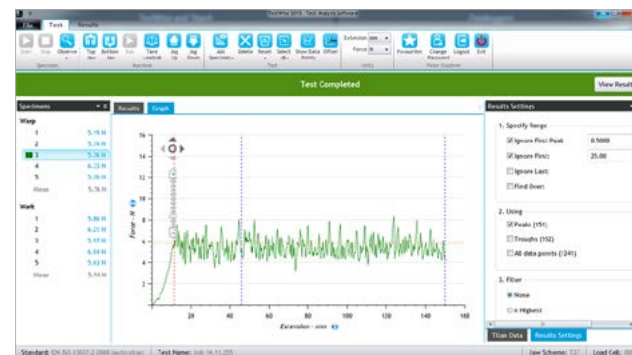
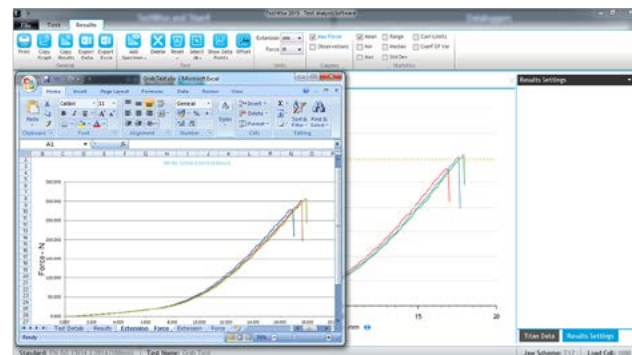


Filters & Favourites

Standards can be easily located through a Search Filter, and users can create a customised list of favourites to access all the standards they use regularly. These are clearly highlighted for easy access.

Automatic Set Up

TestWise transfers the test parameters, specified in the selected Standard, to the instrument for automatic set-up. This reduces the time to start the test which increases production efficiency and reduces training time.



Export to Excel

All the data from testing can be exported to Excel with an automatic graph creation facility, which enables the user to create their own custom analysis and statistics.

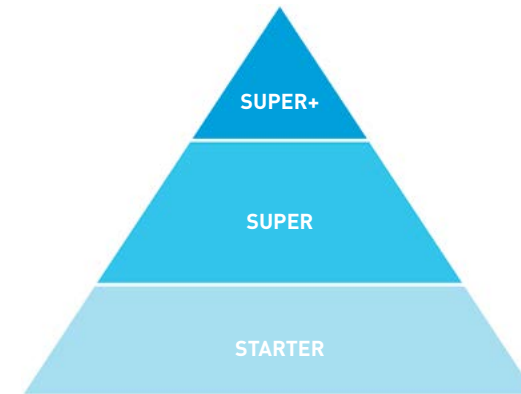
Results

The real time presentation of Time, Extension and Force values allows monitoring of results and immediate visibility of trends during testing.

TechSmart™ - Reliable, Expert Technical Support

As a James Heal customer, you have access to our expert technical and applications support wherever you are in the world. We offer support in various ways; from our free online KnowledgeHub, to paid support, consultancy and training.

You can see our 3 main levels of support below:



SUPER+

Custom consultation and training for customers who need expert one-to-one guidance on using the instrument, applications advice, interpreting Standards and Test Methods, and advice on how to correctly prepare specimens for testing. Contact your local agent or James Heal for more details.

SUPER

Paid support package for customers with a Titan universal testing instrument. Direct access to our Applications Specialists via ticketed email support system and online remote diagnostics, plus free annual software upgrades and regular software updates/bug fixes.

STARTER

Free self-help service, for all customers with any James Heal instrument, to access Engineering and Applications FAQs, Standards information, Operator's Guides and Material Safety Data Sheets (MSDS) via online KnowledgeHub.

Interchangeability

The large range of grips and load cells are interchangeable between Titan5 and Titan10



Loop bars for stretch and recovery tests



OctoGrip with 8 claws for gripping small attachments



To test the strength of yarn in hanks & skeins



Titan5

FlexiFrame

STRETCH & RECOVERY INSTRUMENT

FlexiFrame offers flexibility and accuracy on woven and knitted fabrics in one instrument to meet a variety of standards for stretch and recovery testing.

MODEL NO.: 1511



FlexiFrame - Stretch & Recovery Instrument

FlexiFrame offers flexible and accurate static extension testing. Each of the stations is totally interchangeable, allowing any station to do any test at any one time. It meets the requirements of a broad range of standards, including those from ASTM, Arcadia and Ralph Lauren.

FlexiFrame is used for growth and recovery testing in several standards where the use of a tensile tester would be prohibitive due to the time (usually several hours) required for testing. It is supplied as either portable or wall-mounted to suit your laboratory environment.

The FlexiFrame is standardised and calibratable, giving you and your customers confidence in the quality and repeatability of your results.



A range of accessories are available for the FlexiFrame, including hanger assembly, a dowel pin and stackable weights. This means the user has everything they need to begin testing to the relevant standard.

User error and calculation time are minimized by using the stretch and recovery ruler which allows the user to measure percentage stretch and recovery directly (as pictured).



An extensive range of accessories means testing can be done to an assortment of standards.



The James Heal stretch and recovery ruler measures percentage stretch and recovery without calculation.



Each station has an independent timer which can be used in position or remotely, which minimises user downtime.



TruBurst

BURSTING STRENGTH TESTER

TruBurst, with the TestWise Pro software, offers unprecedented functionality to enable an extensive variety of bursting strength and fatigue tests to be performed on textiles and a wide range of other materials.

MODEL NO.: 1440

TruBurst - Intelligent Bursting Strength Tester

Unprecedented functionality enables an extensive variety of tests to be performed on a wide range of materials: textiles, medical supplies, paper, tin foil and plastic items - it is even used to test mosquito nets.

Automatic Flow Control Calibration

TruBurst provides the unique feature of automatic flow control for M&S P27 and adidas 4.09. For other instruments of this type, it is necessary for the user to repeatedly set the valve, time the flow with a stop watch and calculate the flow rate until it is correct. With TruBurst this process is fully automated, offering tremendous time-savings for the operator.

TruBurst is approved by Marks & Spencer for testing to M&S P27.



Accurate contactless laser distension measurement ensures pin point accuracy and extended diaphragm life.



Automatic Time to Burst

For ISO 13938-2 and similar standards, the method requires the user to burst a specimen within 20s ± 5s. TruBurst will display a warning message if the specimen does not burst within the specified time. If instructed the instrument will then automatically adjust to the correct pressure rate to give the correct burst time.



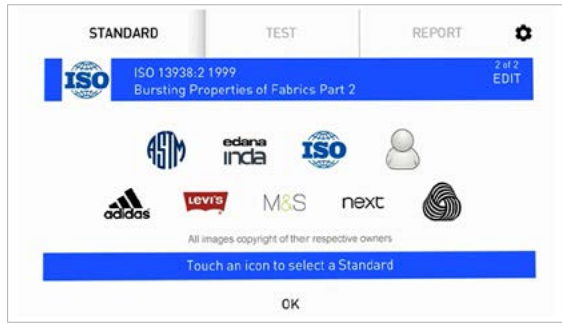
The on-board software enables TruBurst to be operated independently of a PC for bursting strength testing.



TruBurst has five interchangeable domes with automatic recognition of dome size, which accelerates testing and minimises downtime.

TruBurst - 7" Colour Capacitive Touch Screen

TruBurst's 7 inch capacitive touch screen is fast and very responsive. The screen angle is ergonomically designed to give the optimum fit between the users and the instrument. The clear and uncluttered display maximises user efficiency and significantly minimises training time.



Standards Driven Software

Required standards can easily be selected via the relevant icon on the start-up screen. The software is designed to minimise the number of key strokes required to set-up and activate the test, which contributes significantly to greater user and instrument efficiency.



Dome Clamp Pressure

The dome clamp pressure is set through the software, when previously it was necessary to manually adjust the pressure as required. Moving this function into the software makes the process very simple, and dome pressure during the test is recorded in subsequent reports.

Industries for TruBurst

TEXTILE

- Traditional knitted products, e.g. T-Shirts, casual/sportswear with and without elastane
- Woven
- Nonwoven; e.g. wet wipes, cleaning clothes such as J-Cloths.

AUTOMOTIVE

- Car Seats

MEDICAL

- Nonwovens - knee / elbow supports
- Wound dressings
- Suture strength
- Hernia patches
- Organ patches
- Animal skin
- Blister packs
- Mosquito nets for WHO (World Health Organisation)
- Technical textiles: e.g. surgical gowns/masks

PLASTIC

- Food packaging
- Bin liners
- Sacks and various plastic products
- Vacuum packaging

PAPER

- Light weight paper



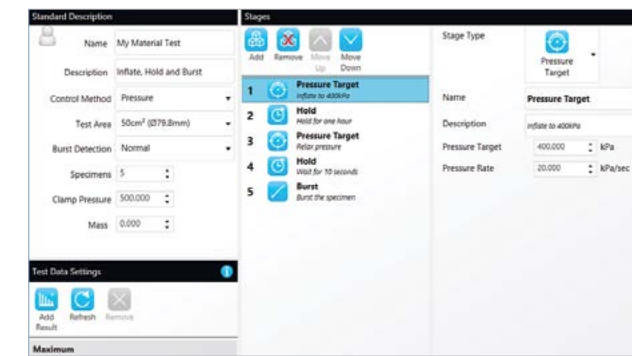
TestWise for TruBurst

As standard, TruBurst is supplied with TestWise Lite which allows test results to be saved to a PC and printed. TestWise Pro, which can be ordered separately, gives access to more advanced features such as cyclic, rapid fatigue, extension and recovery, user-defined tests and export to Excel.

Why TestWise Pro?

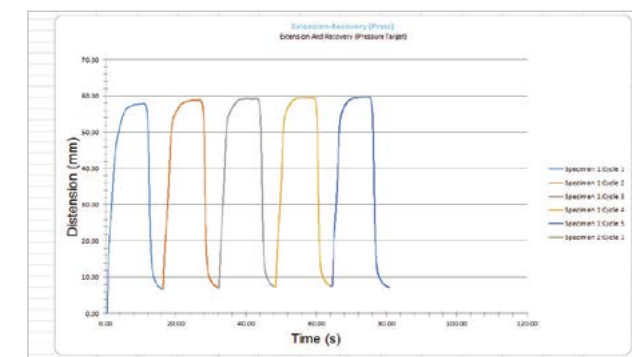
TestWise Pro has enhanced features including enabling the user to have full control of the test parameters, offering users the facility to set-up complex exercise, recovery and fatigue tests.

This facility will undoubtedly be of interest to users and companies involved with product Research & Development and to laboratories who wish to offer a wider variety of tests.



Stages

New, user-defined tests can be created using 'Stages', a function which enables a new test sequence to be simply built up by adding 'stages' to a list'. Various stages of testing can be modified by the user to create their own test.

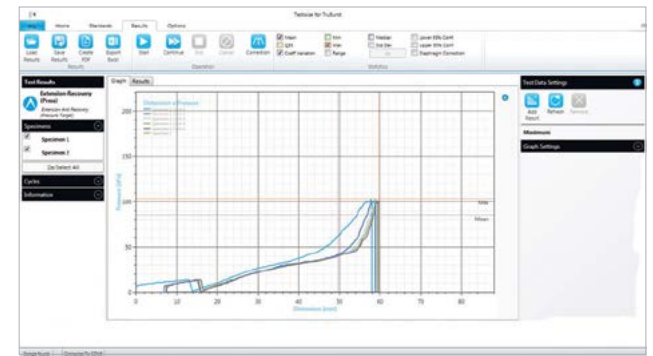


Export to Excel

The intelligent export to Excel function which means graphs are automatically created for Distension vs Pressure, Distension vs Time and Pressure vs Time. This enables the instant visualisation of the material's properties.

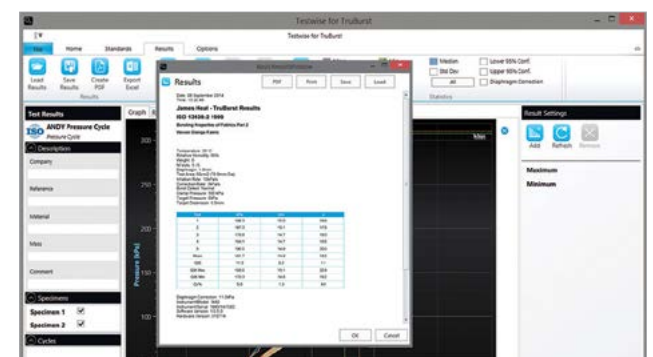
Main Benefits

- Burst, Cyclic, Rapid Fatigue and Extension & Recovery
- The user can build their own tests to specifically match their own testing requirements
- The instrument data can be viewed live during a test
- The raw data from the test can be exported to Excel and manipulated as required by the user.



Live Instrument Data

Live graphing of Burst, Cyclic and Stretch & Recovery testing allows distension, pressure and time to be recorded in real time. The captured data can be saved for subsequent examination and analysis.



Results

Results available include inflation rate, correction rate, burst detection, target distension and many more. Statistics and graphical analysis are created, with tables of individual results and averages.

ElmaTear

INTELLIGENT DIGITAL TEAR TESTER

The new ElmaTear is extremely versatile and may be used to test woven and nonwoven textiles as well as paper, plastic and other sheet materials.

MODEL NO.: 1555

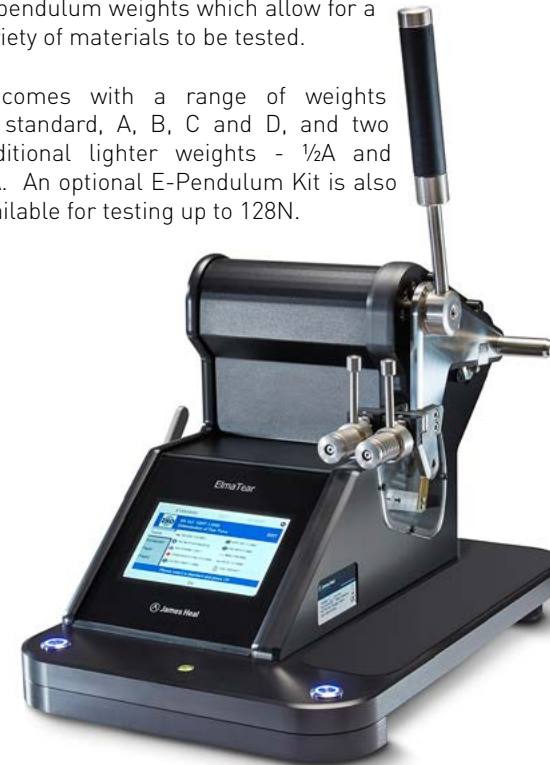
TEARING

ElmaTear - Intelligent Digital Tear Tester

ElmaTear has a comprehensive list of existing standards organised by material type available for selection. The test parameters are pre-set for your convenience, and users can also create and save their own. This user-friendly approach cuts down on training time, and the downtime between tests is minimal helping you achieve maximum throughput.

The ElmaTear is equipped with easy to fit pendulum weights which allow for a variety of materials to be tested.

It comes with a range of weights as standard, A, B, C and D, and two additional lighter weights - 1/2A and 1/4A. An optional E-Pendulum Kit is also available for testing up to 128N.

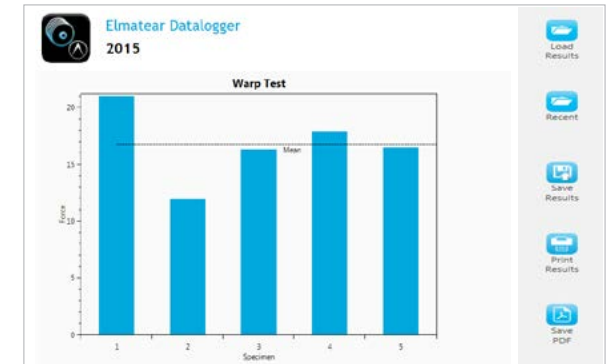


TestWise for ElmaTear

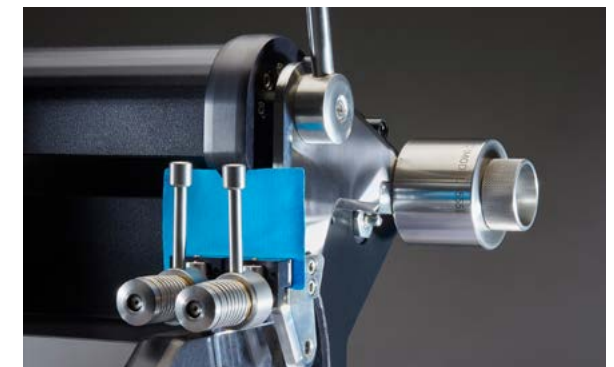
TestWise for ElmaTear packages the results and sends them directly to your computer. From here, the user then has the option to edit and add more detail. Bar graphs can be created and there is the option to save to PDF.

TestWise can be used as an archiving tool to keep a record of all previous results.

This quick and easy process makes analysing results simple. Less time needs to be spent on analysis, increasing user productivity.



TestWise for ElmaTear has the option of creating a bar chart of results and saving to PDF.



Innovative rotary cam lock jaws clamp the specimen ready for testing.

STANDARD	TEST	REPORT														
ISO	EN ISO 13937-1 : 2000 Determination of tear force															
Tear Force 12.31N 74% Range	<table border="1"> <thead> <tr> <th>Warp Test</th> <th>Well Test</th> </tr> </thead> <tbody> <tr> <td>1 12.87N 78%</td> <td>1 11.87N 72%</td> </tr> <tr> <td>2 12.70N 77%</td> <td>2 11.70N 71%</td> </tr> <tr> <td>3 12.52N 76%</td> <td>3 11.52N 70%</td> </tr> <tr> <td>4 12.92N 78%</td> <td>4 11.92N 72%</td> </tr> <tr> <td>5 13.31N 80%</td> <td>5 12.31N 74%</td> </tr> <tr> <td>Mean 12.86N</td> <td>Mean 11.86N</td> </tr> </tbody> </table>	Warp Test	Well Test	1 12.87N 78%	1 11.87N 72%	2 12.70N 77%	2 11.70N 71%	3 12.52N 76%	3 11.52N 70%	4 12.92N 78%	4 11.92N 72%	5 13.31N 80%	5 12.31N 74%	Mean 12.86N	Mean 11.86N	
Warp Test	Well Test															
1 12.87N 78%	1 11.87N 72%															
2 12.70N 77%	2 11.70N 71%															
3 12.52N 76%	3 11.52N 70%															
4 12.92N 78%	4 11.92N 72%															
5 13.31N 80%	5 12.31N 74%															
Mean 12.86N	Mean 11.86N															
Well Test 1 Ply																
Test Complete																

The ElmaTear gives a range warning if results fall within the upper or lower end of the scale, and recommends a different pendulum be used.



TruFade
 XENON ARC LIGHT
 FASTNESS TESTER WITH
 WEATHERING

TruFade genuinely simplifies light fastness testing and delivers accurate and consistent results. It features our latest 2200W, long-lasting xenon lamp, which in combination with current filter technology gets as close as possible to the spectrum of natural sunlight.

MODEL NO.: 1800

TruFade - at a glance



A compact design means the lamp is easily accessible at a low height

Intuitive TestWise operating system with pre-loaded standards

Extra wide access for loading and unloading samples.

Up to 9 tri-sided specimen holders increase usable exposure space

Easy to load triangular sample holders which slot into place within the chamber

SolarSens is positioned on the same carousel as the samples to measure irradiance in the same position

A pull out water tank at the front of the instrument makes filling and cleaning an easy task

Quiet, compact and ergonomic design

TruFade - Xenon Arc Light Fastness Tester with Weathering

TruFade offers a fresh approach to light fastness testing - it streamlines and simplifies a difficult area of colour fastness testing to deliver consistent and accurate results. Now with onboard weathering, for an extended range of testing.

This high performance, long lasting, air-cooled xenon lamp works in 'controlled irradiance' and 'blue wool' mode, which comply with international standards for textiles, leather and other materials.



SolarSens Radiometer

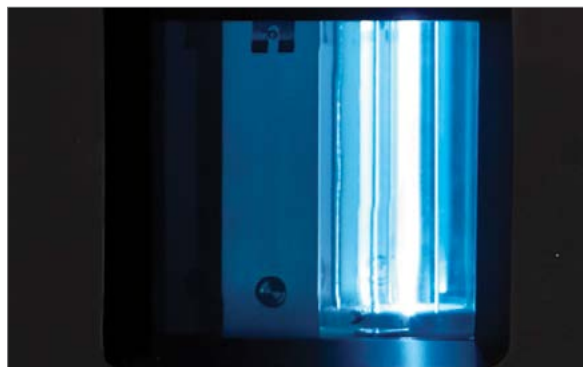
When used in 'irradiance mode' the SolarSens is positioned on the turntable to measure the light output from the xenon lamp, keeping it constant by continuously adjusting power to the lamp.

The SolarSens is positioned on the same carousel as the sample holders, meaning irradiance is measured in the same position. An unparalleled accuracy of measurement is achieved.

SolarSens also measures the black standard temperature and ensures the target value is continuously maintained.



Our tri-sided sample holders are really easy to load and unload, and offer up to 1640cm² of usable exposure space.



The design of the sample holders brings them closer to the xenon lamp, making it more effective therefore extending its lifespan.

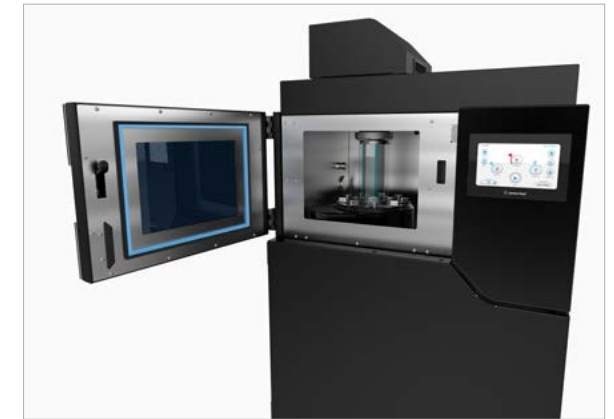


A pull out water tank stored tidily behind the front panel makes cleaning and filling an easy task.

TestWise Touch

Developed by Textile Technologists, for Textile Technologists; our fast, intuitive TestWise™ Operating System increases your laboratory's operational efficiency, reduces downtime, and improves customer satisfaction.

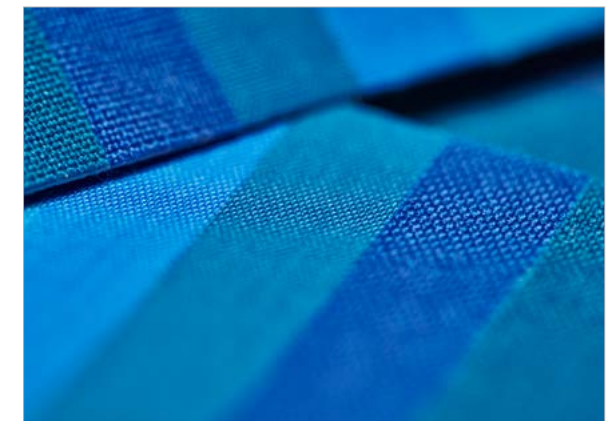
On TruFade, the simple to use touchscreen user interface allows routine testing to be started with only three touches of the screen. It can be operated with minimal training, saving time and reducing the potential for operator error.



Perfect partnerships

For light and weathering fastness testing, our Blue Wools are individually dyed wool pieces, each with a different degree of fastness to light. We supply 'European' Blue Wool Standards for ISO 105-B08 from Deutsche Echtheitskommission, and American Blue Wools from AATCC.

Each batch of blue wools is checked for compliance before it is released. Pre-mounted blue wools strips on card are available to save valuable time and money.



What our customers say...

"We chose the TruFade based on our previous positive experiences with James Heal's products. We had also received positive reviews of the instrument, so we decided to proceed to see if TruFade could help us achieve our testing objectives and overcome our previous challenges.

We would recommend the TruFade for its good handling, and extremely low susceptibility to failure. Also, the excellent service and support provided by James Heal means we have a reliable partner to depend on."

Laboratory Manager, Labtech



GyroWash

COLOUR FASTNESS TESTER

Available in eight and twenty pot instruments, the GyroWash is a washing and dry cleaning colour fastness tester for textiles and leather.

MODEL NO.: 1615/8 (8 Pots) / 1615/20 (20 Pots)



GyroWash - Colour Fastness Tester

Designed to test textile and leather samples, GyroWash is used to determine colour fastness to washing, dry cleaning and chlorinated water. Small and large test vessels are interchangeable, so testing can be carried out to both ISO and AATCC standards simultaneously and without adjustment.

Key features of the GyroWash include:

- Quick drain and fill with easy to reach fittings on the front of the instrument
- A cool touch lid for safe access
- A sealed, insulated bath and lid which results in lower energy usage
- An in-built document pouch for storage of verification readings
- Tool free, interchangeable vessels



Touchscreen User Interface

An intuitive touchscreen user interface, designed alongside textile technicians in a working laboratory, offers testing which is simple to set up. Temperature settings, rotational speed and an autostart function can all be controlled from the touchscreen.



The touchscreen user interface allows you to programme the operation of the machine in less than three steps.



For testing above 60°C, James Heal have developed high washing temperature lids which contain the wash liquor without leakage.



Interchangeable large (1200ml) and small (500ml) vessels can be fitted easily and without tools using a push and twist motion.



DURABILITY

DynaWash & DynaWash Duo

GARMENT & PRINTED FABRIC DURABILITY TESTER

For laboratories performing a high volume of repeated wash tests, DynaWash and DynaWash Duo will provide a life time of laundering in a fraction of the time.

MODEL NO.: 1626 (DynaWash) / 1625 (DynaWash Duo)

DynaWash - Garment & Printed Fabric Durability Tester

Fifteen minutes of testing in the DynaWash or DynaWash Duo is approximately equivalent to five domestic washes, removing the need for repeated wash and dry tests.

Both DynaWash and DynaWash Duo contribute to a reduction in cost, labour and required laboratory space and an increase capacity for testing, and are approved by Marks & Spencer.

Equipped with the James Heal Touchscreen User Interface, which was designed alongside textile technologists in our working laboratory, the DynaWash and DynaWash Duo offer features including clear, easy to use controls, 9 different languages, end of test time visibility and a toughened glass cover.

Key safety features include an IP rated touchscreen, and interlock function which automatically stops the impeller when the lid is open and a heating element safety cut out.



DynaWash Duo with Integrated Spinner

An integrated spinner with a safety interlocked lid allows the user to rinse and extract excess water from samples without having to move them across the laboratory to a different instrument.

The spinner, which has an automatic drain function, is mounted on springs to minimise noise and movement. The spin time is displayed on the user interface, but is controlled by a separate button for ease of use.



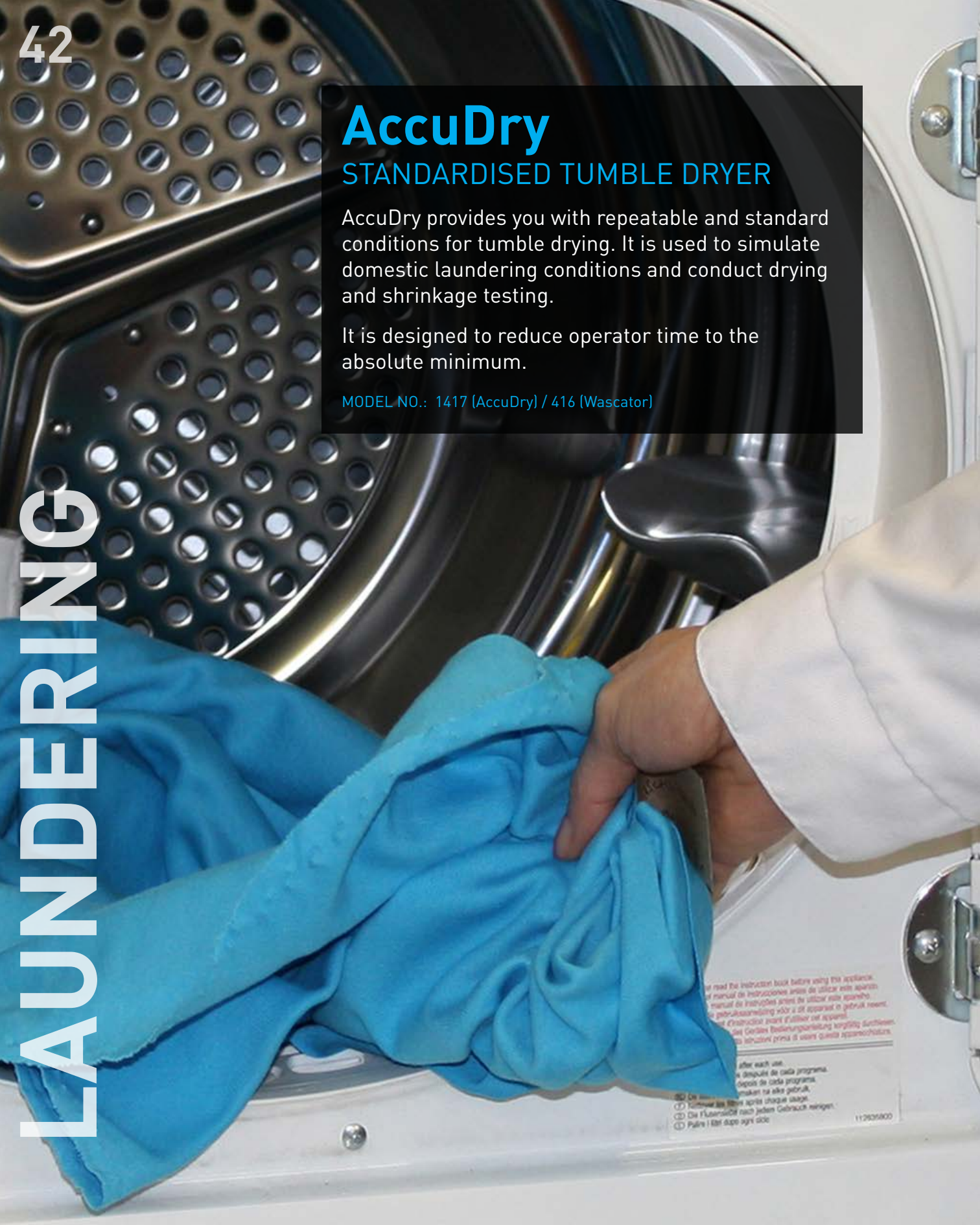
The process bath and impeller are constructed in stainless steel for improved quality and a longer lifespan.



Available as in two models - DynaWash (as above) and DynaWash Duo with integrated spinner.



Multiple tests can be completed, including print durability, pleat retention, cockling, flock retention, differential shrinkage and more.



AccuDry

STANDARDISED TUMBLE DRYER

AccuDry provides you with repeatable and standard conditions for tumble drying. It is used to simulate domestic laundering conditions and conduct drying and shrinkage testing.

It is designed to reduce operator time to the absolute minimum.

MODEL NO.: 1417 (AccuDry) / 416 (Wascator)

Laundrying

Further to the DynaWash and DynaWash Duo instruments, James Heal offers a range of instruments which simulate domestic laundering conditions in a precise and measurable manner. These are Wascator, a standardised washing machine, and AccuDry, a standardised tumble dryer.

Wascator

The Wascator has established itself as the standard reference washing machine for textile laboratories and complies fully with the requirements of European standards and retailers test methods.

When you buy a Wascator from James Heal, it comes ready programmed for EN ISO 6330:2000, EN 26330:1993 and ISO 6330:1984. Other programmes: ISO 6330:2012, a suite of Marks & Spencer test methods and other standards are available to purchase on separate memory cards.



Applications for the Wascator include:

- Measurement of shrinkage
- Measurement of spirality
- Assessment of appearance after laundering
- Assessment of wrinkling
- Assessment of ease-of-ironing
- Washing before abrasion tests
- Washing before pilling tests
- Washing before flammability testing

James Heal has been selling, servicing and calibrating Wascators for more than 25 years and has contributed a great deal to its development as a standardised machine. When you buy a Wascator from us, our vast knowledge and accumulated experience is at your disposal.

AccuDry

AccuDry is a standardised, air-vented, reverse action European Tumble Dryer. It complies with EN ISO 6330:2012, is suitable for TWC-TM 31 and 254, and meets the requirements of a range of Retailers' specifications.

This air-vented tumble dryer is used to simulate domestic laundering conditions and is designed to reduce operator time to the absolute minimum. An easy to remove compartment makes preventing the build-up of lint quick and convenient, keeping your AccuDry performing well.



Updates have been made to the AccuDry to make it suitable for use in more countries around the world, including encompassing both 50Hz and 60Hz frequencies within one machine. An IEC C19/C20 type connector has been added to the back for ease of installation, which removes the need to cut wires and install new plugs to meet the socket requirements of a particular country.

Intuitive Touchscreen

The features of the Touchscreen are totally intuitive ensuring the test set-up is very simple, enabling users to become instant experts. This offers reduced training time and increased efficiency which contributes to cost reductions and an enjoyable user experience. The touchscreen is made with toughened cover glass which has been tested to replicate laboratory wear and tear conditions.



FlexiBurn MULTI-PURPOSE FLAMMABILITY TESTER

FlexiBurn offers an effective, controlled way of testing ignition and flame spread properties of a range of materials.

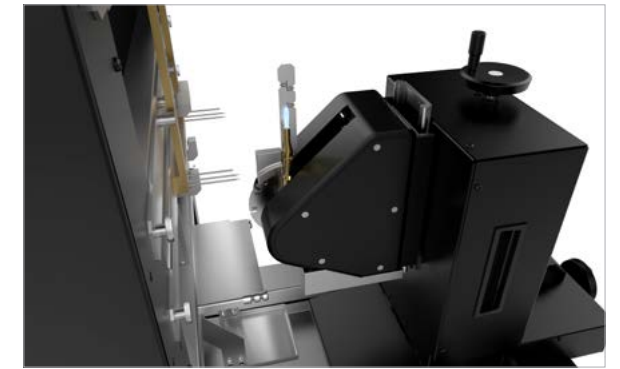
MODEL NO.: 1880

FlexiBurn - Multi-purpose flammability tester

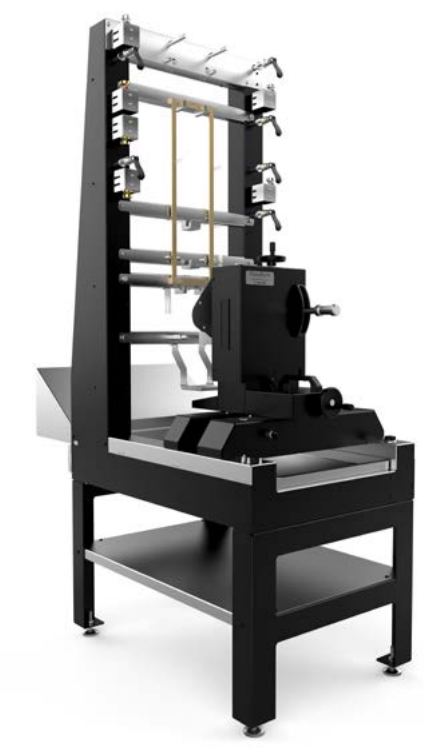
The FlexiBurn Flammability tester offers an effective and controlled way of testing ignition and flame spread properties of a range of materials

To comply with various BS, EN, EN ISO and retailer standards, we offer a comprehensive range of easily interchangeable gas burners, interchangeable test frames and test materials.

When used with the optional radiator assembly, FlexiBurn complies with EN 13772 'Burning behaviour - curtains and drapes - measurement of flame spread with large ignition source'.



Robotic arm for precise and controlled positioning of the burner.



Easily interchangeable frames to perform a variety of different tests.



Suitable for a range of applications including curtains and drapes, nightwear, children's toys, protective clothing and technical fabrics.

TestWise Software

Now including our intuitive TestWise software, to optimise your laboratory efficiency and maximise productivity.

Key features include:

- Auto set up of pre-loaded standards
- Minimal training required
- Controls to ensure compliance

Small Instruments

James Heal's range of smaller instruments put innovation at the forefront of every day testing procedures.

Perspirometer

The Perspirometer is used to determine colour fastness to perspiration, cold water and sea water. The same instrument is employed to predict the potential of white or pastel coloured textiles to yellow in transit or storage.

It comprises of a stainless steel frame, with top and bottom plates and an intermediate spring plate. The springs, which act on this plate, are designed to maintain a uniform pressure on the specimens as they are drying out in the Incubator.

The James Heal Phenolic Yellowing Test Kit, for use with the Perspirometer, has been approved by leading retailers including Marks & Spencer.

MODEL NO.: 290



Incubator

Incubation temperatures for colour fastness and phenolic yellowing tests are 35°C and 55°C respectively. Our incubators are designed to hold these relatively low temperatures within the specified tolerances.

The Incubator is used in conjunction with the Perspirometer - samples are transferred to the incubator whilst loaded in the Perspirometer and left for a predetermined period of time.

Two sizes of incubators are offered - thirty litres, which holds up to four Perspirometers, and fifty-five litres which can hold eight. Both models are fan-assisted to promote uniform temperature distribution in the heated chamber.

Model No: IN30 (30 litres) / IN55 (55 litres)



ThermaPlate

Designed with safety in mind, the ThermaPlate has a positive park position for the top plate, cool exterior surfaces and a warning light when temperatures exceed 60°C.

The incredibly intuitive Touchscreen enables the operating temperatures of the top and bottom plates to be set and will indicate once the temperature has been reached and the instrument is ready to use. The Test end display will inform the user when the test will be complete.

The top plate is designed so that its weight and subsequent pressure on the specimen can be easily checked. An optional temperature measurement kit is available for checking the performance of the top and bottom plates.

MODEL NO.: 1620



Spray Rating Tester

The Spray Rating Tester performs a shower test to determine the resistance of fabric to surface wetting by water. Its easy handling and precise components ensure accurate and convenient testing, ideal for testing waterproof materials and high-tech fabrics.

The spray rating tester comprises of a stainless steel framework, incorporating a funnel. The spray nozzle is a machined component which ensures the water flow is always correct. The specimen holder facilitates rapid and secure mounting of specimens in the correct position on the instrument.

MODEL NO.: 513



Crockmaster

Available as either a hand operated or motorised instrument, Crockmaster is used to determine colour fastness to wet and dry rubbing.

Two alternative sizes of interchangeable rubbing fingers are available, together with an interchangeable token holder which allows a number of test standards to be accommodated.

Apart from textiles, our Crockmaster can be used to test the colour fastness of rubbing of carpet, laminates and printing inks, as well as the microscratch resistance of lacquers, coatings or painted surfaces.

MODEL NO.: 670 (Hand-Operated) / 680 (Motorised)



Test Materials

Made in Britain

Our test materials are manufactured, processed and tested in our own purpose-built Test Materials Centre within the James Heal premises in the UK. Here we have facilities for warping, weaving, inspection, cutting, sewing, processing and packaging, as well as for physical and colour fastness testing.

Quality Assurance

James Heal have the technical experience and knowledge to understand the crucial importance of compliant Test Materials to the end user.

We have invested heavily in our Quality Control infrastructure, which includes two well-established and equipped ISO 17025-compliant in house Laboratories and a wide range of quality control procedures and processes, all of which are regularly and independently audited.

A group of experienced Textile Technologists, residing in the Test Materials Centre, oversee and support our Quality framework, which includes daily testing in our conditioned laboratories of each and every batch of products or materials received for sale to our global partners and customers.

Bespoke Products

Our modern and flexible manufacturing facility, allows us to produce variants on standard products or develop totally new product lines to support our wide customer base.

Global Network

We have agents and distributors in over 60 countries so you can order products locally and pay in your local currency.

Martindale Test Materials

The Martindale test is sensitive to the use of the right test materials and as the instrument manufacturer, we have an intuitive understanding of this critical interface.

Whether it's Abrasive Cloth, Woven or Nonwoven Felt or Polyurethane Foam, we guarantee total compliance with the relevant standards.

We also stock a variety of alternate abrasants, dependent on the material under test.



Cotton Lawn/Crocking Cloth

Crocking cloth, also known as cotton lawn or cotton rubbing cloth, is used in a Crockmaster (Crockmeter) to check the amount of dye transfer, following a dry or wet rub fastness test.

We manufacture both ISO and AATCC cloths in accordance with their different specifications.

We supply either cut pieces or in roll form. Cut pieces can be ordered with either straight or gimped edges.



Multifibre DW

We weave our own Multifibre DW, inspecting every metre to ensure you receive perfect fabric every time.

It complies with the requirements of ISO 105 F10 and is approved by many UK and European specifiers.

It is supplied in rolls or cut pieces. American Multifibers, suitable for AATCC test methods, are different in composition and construction. We stock the most commonly used variants.



Multifibre LW

Approved by Marks & Spencer, our Multifibre LW is as the traditional Multifibre DW, but the Acetate strip is replaced by a regenerated cellulose strip.

It is considered that regenerated cellulose is more relevant than Acetate to the fibres commonly found in current apparel fabrics.

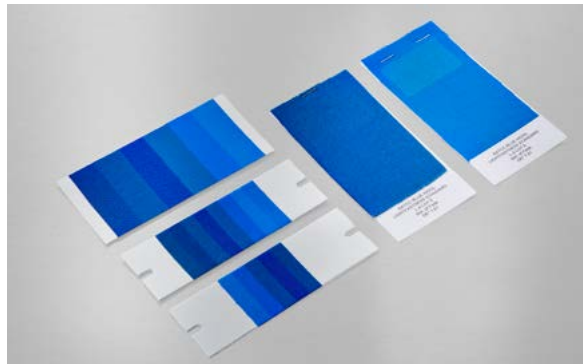
We have added a thoroughly tested colourfast identification strip into the selvedge of our Multifibre LW to aid stock identification.



Blue Wools

Blue Wools are used for light and weathering fastness testing. They are individually dyed wool pieces, each with a different degree of fastness to light.

We supply Blue Wools in pieces or in strips bonded to card to accommodate your preferences. We can develop bespoke cards to meet your exact needs.



Makeweights

Makeweights, also known as 'Ballast' or 'Loading Fabrics', are used to make up the load in washing, dry cleaning, drying or durability tests.

We manufacture Makeweights to the precise specifications demanded by various ISO standards. We also supply American Makeweights as specified in AATCC Test Methods. In addition to standard Makeweights, we are flexible and willing to produce non-standard components.

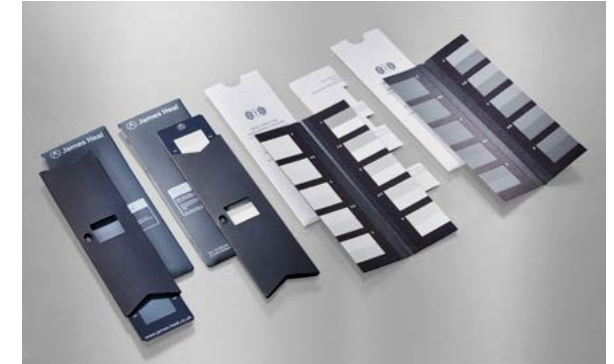


Grey Scales

Grey scales are used for assessing colour change and staining during colour fastness testing.

The colour change scale consists of nine pairs of grey coloured chips, from grades 1 to 5 (with four half steps). Grade 5 represents no change and Grade 1 depicts severe change in some standards.

The staining scale consists of nine pairs of grey and white coloured chips from grades 1 to 5 (with four half steps).



Detergents

We manufacture a comprehensive range of standardised soap and detergents, used for colour fastness and shrinkage testing and specified in many European, International and American standards.

Our commitment to 'made in the UK' is no different for bulk detergent manufacturing and as such, a comprehensive quality control flow process sits around each tonnage produced. External and independent Laboratory testing under-pins the final part of our sign off procedure, carried out by our Textile Technologists to ensure complete compliance with the strict specifications in place.



Pilling/Snagging Materials

We offer an extensive range of test materials to complement our portfolio of pilling and snagging instruments.

These include cork liners, pilling tubes, and snagging points for Orbitor; liners, ramps, half-size pilling tubes, locking rings and snagging bars for the M&S Pilling/ Snagging Drum; cork liners, cotton sliver and specimen edge glue for Impulse; and felt covered pilling tubes, locking rings and snagging bars for SnagPod.



Photographic Standards

Standard, graded photographs are still widely used for evaluating surface changes after testing.

To ensure absolute consistency from batch to batch and to make the photographs as easy as possible to use, they are produced in-house and under strictly controlled conditions.

Our ProView Assessment Cabinet has these photographs preloaded into its software.



Yellowing Test Kit

Our Yellowing Test Kit is the original, developed by Courtaulds Research, for investigating complaints arising from transit or storage yellowing.

Beware of copies and counterfeit products, which do not produce accurate or consistent results or might cause health and safety issues.



AATCC Test Materials

We stock a comprehensive range of genuine AATCC test materials including gray scales, crocking cloths, ballasts, multifibers, light fastness testing standards and detergents.



Test Materials PRE-CUT SAMPLES

For your convenience, pre-cut test materials in different sizes are available for many of our products including Martindale Test Materials, Multifibre DW, Multifibre LW and Crocking Cloth.

Pre-cut test materials eliminate preparation time to increase the efficiency of the testing process.



Service & Support

With over **140 years** in the business, you can be safe in the knowledge that you're with the experts

We trade in **104 countries** worldwide

We're qualified to do more than **70** calibration procedures

Nearly **10,000** calibration certificates are generated each year, electronically stored in personalised and safe accounts on our website

Certificates are delivered within **4 days** of calibration by our UKAS accredited engineers

We know you have no time for down time

which is why it's so important to keep your testing equipment running well to minimise disruption and maximise uptime.

We also know how important your reputation is

which is why it's crucial to have testing equipment which performs consistently, so you can pass these results onto your customers.

We understand that unexpected repairs have a cost

which is why keeping your instruments serviced, calibrated and performing well throughout the year will pay itself back time and time again.

We Provide

- Installation, commissioning and training
- Technical support for both engineering and applications
- Skilled engineers with an average of over 12 years experience
- Onsite calibration & certification
- Preventative maintenance
- Breakdown repairs
- Spare parts
- A flexible service which meets our customer's evolving needs
- A worldwide service supporting our global network of customers

You Can Expect

- High quality, comprehensive calibration and service to keep your assets in prime condition
- Knowledge that your equipment will be serviced by James Heal, UKAS accredited service engineers
- Access to our experienced applications Technicians
- Support from our Technical Engineers
- Training to ensure your staff are productive as quickly as possible
- Availability of spare parts, many only manufactured and supplied by James Heal
- Excellent customer service and peace of mind

Service & Support

We recognise the investment our customers make in purchasing James Heal instruments and want to ensure that investment is protected. This is why we offer comprehensive after-sales service, repairs and technical support, plus UKAS accredited calibration. Why would you risk anything less?

Calibration

UKAS accredited James Heal engineers calibrate each instrument to ensure it totally complies with the relevant standard – there is no compromise.

Your instruments may produce inconsistent and inaccurate test results if they do not meet calibration standards and so fail to fulfil the expectations of your customers. This could compromise your reputation for reliability.

Our comprehensive approach to instrument calibration is demonstrated on the following page.



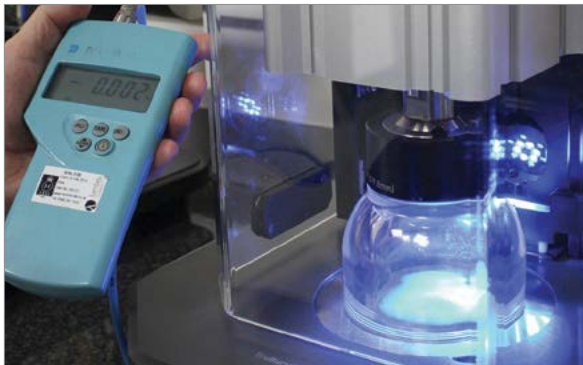
Your instrument will undergo an unrivalled degree of calibration to ensure total compliance to standards.

Service

Our team of engineers, who average in excess of 12 years field experience, travel the world to satisfy customer needs for service and calibration.

They possess extensive knowledge of test equipment from a range of manufacturers and are ideally placed to ensure every part of your instrument is performing accurately.

Regular visits from James Heal engineers will minimise downtime and ensure compliance to standards is achieved and maintained.



Regular service visits by our UKAS accredited engineers will help to minimise downtime to produce accurate and consistent results.

Technical Support

Instrument failures can lead to lost revenue, higher costs and a shortage of testing capacity. James Heal has teams offering both Technical and Applications support who will respond to your needs with minimum delay.

We continuously monitor and improve the performance of our instruments and after-sales support in order to establish permanent solutions that comply with standards.



Our Technical Support Teams are totally committed to continuous improvement of our after-sales service.

A wealth of knowledge about our instruments and others

Our engineers have the training and diagnostic tools required to maintain and calibrate James Heal instruments, plus a broad range of other brands on the market. Even if you didn't purchase from us, you can make use of our industry experience and hands on knowledge on all the products below.

Accredited by UKAS (United Kingdom Accreditation Service) and compliant with ISO 17025

AccuDry Tumble Dryer
Air-Matic Burst Tester
Crockmaster, Crockmeter
FlexiBurn, Rhoburn, Other Vertical Flammability Testers (and associated test frames)
GyroWash, Rotawash, Launderometer, Other Washwheels
Impulse, Other Random Tumble Pilling Testers
Load Cells for Titan, Tinius Olsen, Hounsfield, Testometric and Other Tensile Testers (up to 5000N)
Martindale, Nu-Martindale, Other Martindale Abrasion Testers
Orbitor, Other Pilling Testers
Perspirometer
Sample Cutters
Tautex, Other Crimp Testers
TruBurst, Other Pneumatic Bursting Strength Testers
Wascator CLS
Wascator 7IMP-LAB
Wascator 7IMP

Compliant with ISO 17025

Apollo Light and Weathering Fastness Tester
Balances (1-900g capacity and up to 0.0001g)
Bundesmann Water Repellency Tester
Bursting Strength Testers (max. 6000kPa)
Check Weights (up to 6000g)
Contact Heat Tester
Crease Recovery Tester
Crockmeter (rotary)
Digital Timers
Durawash
DynaWash
ElmaTear
Elmendorf Tear Tester (Mechanical)
Electrolux Tumble Dryers T4130 & T5130
Electrolux Washers W455H & W555H
Fabric Extensometer
Force Gauges (snap/button testers)
Hydrostatic Head Tester
Incubators (laboratory)

Load Cells for Alphas Tensile Tester
Mace Snag Tester
Martindale Ball Plate
Martindale Sock Abrasion Kit
Miele Rotary Iron
Miele Washers
Ovens (laboratory)
Pick Counters
Piece Glasses
ProMace
Seam Slippage Tester
Shrinkage Rulers
Shrinkage Templates
SnagPod
Spray Rating Tester (including spray nozzle)
Steel Rulers (up to 1m)
Stroboscope (Analogue)
Stroboscope (Digital)
Tension Meter (Analogue)
Tension Meter (Digital)
ThermaPlate Contact Heat Tester
Thermohygrograph
Thermometers (up to 90°C)
Thickness Gauges
TruFade Light Fastness Tester
Titan
Tumble Dryer (ISO 6330)
Tumble Dryer (M&S)
Twist Testers
VeriVide Colour Assessment Cabinets
Veslic Rub Fastness Tester
Whirling Hygrometer
Whirlpool Dryer
Whirlpool Washer
Wira Rapid Drying Unit
Wira Steaming Cylinder
Wrap Reels
Wrinkle Recovery Tester

Why have your Martindale calibrated to UKAS standard by James Heal?



LISSAJOUS FIGURES

Our Engineer will calibrate the lissajous motion for abrasion testing and the pattern measured for both width and length using digital calipers. This process is then repeated for pilling testing.

If the lissajous motion is **NOT** calibrated and measured - your Martindale **WILL NOT COMPLY** to the Standard.

MASS

The sample holder, plus both of the weights used, are weighed on a calibrated balance.

This process is repeated for the pilling mass - two weight measurements are taken, one for the pilling ring and another for the specimen holder, spindle and O rings.

This is a requirement of the Standard. If these weights are incorrect the test results will be **COMPROMISED**.

PARALLELISM

The sample holders are tested in-situ. A 0.05mm feeler gauge is inserted under the sample holder to ensure the plates are flat and the spindles are not bent.

An imbalance in the sample holder would result in uneven wear of the material surface resulting in **INACCURATE** test results.

SPINDLE BEARING FRICTION TEST

To check the bearing is working correctly our Engineer will place a 12kPa weight on the top of the spindle and a 10g weight hung from a filament. The movement of this is measured. If the bearing is working correctly, the 10g weight will spin freely.

If this process is **NOT** carried out during a Calibration, test results from the Martindale **WILL BE INCONSISTENT**.

SAMPLE HOLDER INSERT PROTRUSION

A James Heal Engineer will use a micrometer to measure the sample holder insert protrusion for each plate, taking the measurement of depth between the protrusion and the edge.

If each sample **DOES NOT** protrude at the same level the test results **WILL BE INCONSISTENT**.

ENVIRONMENT

The temperature of the environment in which the Martindale is located is measured using a digital thermometer.

If the ambient conditions are **NOT** as stated in the Standard the samples will **NOT** produce the correct results.

PRESSING WEIGHT MASS

The mass of the pressing weight is measured on a balance which has first been checked with a calibrated weight. The diameter of the pressing weight is also measured using digital calipers.

INCORRECT weight or dimensions of the Pressing Weight will result in **NON-COMPLIANCE** to the Standard and **INCONSISTENCY** of results.



SPEED

Speed is measured in two ways; a tachograph is used to determine rotation speed and a stop-watch to measure the number revolutions in a given time.

The speed is specified in the Standard, therefore incorrect speed equals **NON-COMPLIANCE** and the materials will deteriorate at a quicker/slower rate resulting in **INACCURATE** test results.

SAMPLE HOLDER LIFT

Our Service Engineer will use digital calipers to measure how far the sample holder lifts off the plate.

Any deviation from the measurement within in the Standard will result in **NON-COMPLIANCE** and **INCONSISTENT** test results.

CLAMPING RING INNER DIAMETER

Digital calipers are used to measure the inner diameter of each clamping ring in three equally spaced places.

If this is **NOT** calibrated the samples will be loose and **NOT** within the specification.

Standards

Below are the standards, listed under the relevant instrument name, for which James Heal instruments are compliant. From page 64 are the same standards listed alphanumerically with reference to the relevant page in this brochure.

AccuDry - Page 42

EN ISO 6330:2012	NEXT TM9	NEXT TM36a
M&S PG01	NEXT TM10	Woolmark TM31
NEXT TM7	NEXT TM11	Woolmark TM254
NEXT TM7a	NEXT TM12	
NEXT TM7b	NEXT TM34	

Crockmaster - Page 47

AATCC 8	BS 3424: Part 14	M&S C08
AATCC 165	IKEA IOS-TM-0002	Mercedes Benz DBL 7384
BS 2543	ISO 105-X12	NEXT TM06

DynaWash / DynaWash Duo - Page 40

Arcadia AG10	M&S P6	M&S P69
BS 7907	M&S P7	TM 8
M&S P5	M&S C15	

ElmaTear - Page 32

Nonwoven		
WSP 100.1		
Paper		
AS/NZS 1301.400s	PAPTAC D9	TAPPI T414
ISO 1974	GB/T 455	
Textiles		
AS 2001.2.8	EN ISO 13937-1	M&S P29
ASTM D1424	GB/T 39714.1	NEXT TM17
BIS IS 6489-1	ISO 4674-2	
CAN/CGSB 4.2 NO.12.3	JIS L 1096 D	

Plastics		
ASTM D1922	ISO 6383-2	GB/T 16578.2
BIS IS 13360-5-23	JIS K 7128-2	AS 2001.2.8

FlexiBurn - Page 44

BS 5438	EN 1103	IMO Resolution MSC.61(67)
BS 5722	EN 13772	EN ISO 15025
BS 5867-2	EN 14878	EN ISO 6940
BS 6249	EN 1624	EN ISO 6941
BS 7837	EN 1625	M&S P116
CAN/CGSB-4.2 No. 27.10	EN 71-2	SATRA TM225 (PM225)
EN 1101	IMO Resolution A 471(XII)	
EN 1102	IMO Resolution A563(14)	

FlexiFrame - Page 26

Arcadia AG31 - ii	ASTM D2594 - ii 10.4	ASTM D3107 - ii 10.5
ASTM D2594 - i 10.3	ASTM D3107 - i 10.3 & 10.4	Ralph Lauren Fabric Stretch

GyroWash - Page 38

AATCC TM 132	DS-026	FTMS 191A - 5610
AATCC TM 151	FTMS 191A - 5506	FTMS 191A - 5614
AATCC TM 190	FTMS 191A - 5509	FTMS 191A - 5620
AATCC TM 61	FTMS 191A - 5600	FTMS 191A - 5621
AATCC TM 86	FTMS 191A - 5605	FTMS 191A - 5622

GyroWash - continued - Page 38

ISO 105-C06	JIS L 0860	NEXT TM 5
ISO 105-C08	M&S C04	GB/T 3921
ISO 105-C09	M&S C05	GB/T 5711
ISO 105-C10	M&S C10A	Woolmark TM 177
ISO 105-C12	M&S C37	Woolmark TM 193
ISO 105-D01	M&S P12A	Woolmark TM 240
ISO 105-E03	NEXT TM 2	Woolmark TM 241
ISO 105-E12	NEXT TM 2A	Woolmark TM 250
ISO 105-X05	NEXT TM 3	Woolmark TM 294
JIS L 0844	NEXT TM 3A	Woolmark TM 300

Impulse - Page 14

ASTM Impeller		
adidas® Group 4.07	GB/T 4802.4	NFG 07-132
ASTM D3512	JIS L1076 method D	SANS 6116

ISO Impeller		
ISO 12945-3		NFG 07-121

JIS Impeller

JIS L1076 method D

Martindale - Page 6

Abrasion Tests		
Arcadia AG32	BS 8428	ISO 17704
Arcadia AG34	EN 13520	ISO 5470-2
Arcadia AG35	EN 14325	IWTO 40
AS 2001	EN 14465	M&S P19 series
ASTM D4966	EN 14605	NEXT TM18 series
BIS IS 12673	EN 343	SABS 1009
BS 2543	EN 388	SFS 4328
BS 3424-24	EN 530	SN 198529
BS 5690:1979	EN 943-2	TWC 112
BS 5690:1988	EN ISO 12947	Volvo 1024
BS 5690:1991	ISO 11856	Volvo 7122

Modified Abrasion Tests		
Arcadia AG33	EN 16094	PV 3975
Arcadia AG61	ISO 17076-2	VDA 230-211
Arcadia AG75	ISO 26082-1	VDA 230-212
EN 13770	IUP 48-2	
EN 15973	IUP 53-1	

Pilling Tests		
Arcadia AG26	EN ISO 12945-2	M&S P18C
ASTM D4970	ISO 12945-2	NEXT TM26
EN 943-1	ISO 12947-1	SN 198525
EN 943-2	M&S P17	Woolmark TM196

Orbitor / SnagPod - Page 16

BS 5811 (withdrawn)	EN ISO 12945-1	M&S P18B
BS 8479	ICI Test Method 444	M&S P21A
BS 8479:2008	M&S P18A	Woolmark TM 152

Perspirometer and Incubator - Page 46

Colour Fastness to Perspiration, Water/Sea Water		
AATCC 106	BS 1006: UK-TB	ISO 105-E02
AATCC 107	BS 1006: UK-TJ	ISO 105-E04
AATCC 15	ISO 105-E01	

Perspirometer and Incubator - continued - Page 46

Phenolic Yellowing

ISO 105-X18 M&S C20B TESCO TM/137/01

ProMace - Page 12

ASTM D3939 JIS L 1058 VDA 230-220

Spray Rating Tester - Page 47

AATCC 22 ISO 4920 M&S P23
EN 24920

ThermaPlate - Page 47

Colour Fastness

AATCC 117 GB/T 5718 JIS L 0850
AATCC 133 GB/T 6152 JIS L 0879
adidas® Group 5.09 ISO 105-X11 M&S C13

Thermal stability

M&S P10

Titan 5kN / Titan 10kN - Page 20

Compression and Ball Burst

ASTM D2207 BS 3424 Part 6 ISO 3303 Method A
ASTM D3787 EN 12332-1 ISO 3379
ASTM D4830 EN 388 - Puncture Resistance (6.4) ISO 8124-1 Compression Test
ASTM D4833 EN 71-1 Compression Test: 110N ISO 9073-5
ASTM D5748 EN ISO 3386-1 JIS L1085 (6.7.3)
ASTM D6797 GB 6675.2 Compression Test LTD 18
ASTM D751 Section 18 GB/T 19976 NWSP 110.5
ASTM D751 Section 22 IS 14625 Annex D

Seam Strength

AATCC/ASTM TS-015 EN ISO 13935-1 JIS L1096 (8.23.1) Method A (Part 1 - Leave 1h)
adidas® Group 4.13 EN ISO 13935-2 JIS L1096 (8.23.1) Method A (Part 2 - Measure)
adidas® Group ST-05 EN ISO 13935-2 JIS L1096 (8.23.1) Method B (No Leave Time)
Arcadia AG36 EN ISO 13936-1 JIS L1096 (8.23.1) Method B (Part 1 - Leave 1h)
Arcadia AG38 EN ISO 13936-2 JIS L1096 (8.23.1) Method B (Part 2 - Measure)
Arcadia AG39 EN ISO 13936-3 (Apparel) JIS L1096 (8.23.1) Method C (Thin Filament Fabrics)
AS 2001.2.21 EN ISO 13936-3 (Upholstery) JIS L1096 (8.23.1) Method D (Wool Fabrics)
AS 2001.2.22 FZ/T 81004 JIS L1096 (8.23.2) Method B
AS 2001.2.22 (with Seam Strength) FZ/T 81006 LTD 24
ASTM D1683 FZ/T 81007 M&S P12
ASTM D4034 FZ/T 81008 M&S P12A
ASTM D434 FZ/T 81010 M&S P12B
ASTM D5822 GB 6675.2 (Tension Test for Seams) M&S P12C
BS 2543 GB/T 14272 NEXT© TM16
BS 3320 GB/T 18132 NEXT© TM16a
BS 3424 Part 33 Method 36 GB/T 2660 SANS 6194
BS 5131-3.1 GB/T 2662 TWC-TM117
BS 5131-5.13 GB/T 2664 UNI 10606
DECATHLON DS-160 - TEST 1 GB/T 2665 UNI 4818-11
DECATHLON DS-160 - TEST 2 GB/T 2666 4.4.10 & Annex B-T
DECATHLON DS-160 - TEST 3 GB/T 2666 4.4.11 & Annex C-T
DECATHLON DS-160 - TEST 4 ISO 17697 Method A (Needle Clamp)
DIN 53868 ISO 17697 Method B (Stitched Seam)
EN 13572 Method B (Stitched Seam) ISO 8124-1 (Tension Test for Seams)
EN 13572:2001 Method A (Needle Clamp) ISO 8124-1 (Tension Test for Seams) (VS)
EN 71-1 (Seam Test) JIS L1093 Grab Method A-1 (horizontal seam)
EN 71-1 (Seam Test) (VS) JIS L1093 Grab Method A-2 (vertical seam)
EN ISO 13935/6-2 (kgf) (combined method) JIS L1093 Grab Method A-3 (ISO method)
EN ISO 13935/6-2 (N) (combined method) JIS L1096 (8.23.1) Method A (No Leave Time)

Security of Attachment

ASTM D1335 (IP units) BS 3084 Annex H JTA ST 2012 Tension Test
ASTM D2061 (10.1) BS 3084 Annex I JTA ST 2012 Tension Test (VS)
ASTM D2061 (10.3) BS 3084 Annex J LS&CO METHOD 11 (IP units)
ASTM D2061 (19.1) BS 4162 LTD 16
ASTM D2061 (19.2) BS 7907 (Annex B) LTD 26
ASTM D2061 (19.3) BS 8510 (Section 10) LTD 81 (based on 16 CFR 1500.53)
ASTM D2061 (19.4) CEN/TR 16792 Annex B LTD 84 Part 1
ASTM D2061 (19.5) CFR (16) 1500.51-53 Tension Test LTD 84 Part 2
ASTM D2061 (27.3) EN 15598 M&S P115
ASTM D2061 (72.1) EN 71-1 (Tension Test) EN 71-1 (Tension Test) (VS) M&S P115A
ASTM D4846 GAP INC S1023 M&S P115B
ASTM D6644-01 (2013) GB 6675.2 (Tension Test) M&S P115C
ASTM D7142 (Option 1) IS 14181 (Part 2) Annex B M&S P115H
ASTM D7506 (IP units) IS 14181 (Part 2) Annex C M&S P122
ASTM D7506 (SI units) IS 14181 (Part 2) Annex D M&S P124
ASTM F1917 - Bumper Pad Tie Attachment Strength IS 14181 (Part 2) Annex E M&S P141
ASTM F963 (Tension Test for Seams) IS 14181 (Part 2) Annex F NEXT© TM37
ASTM F963 (Tension Test for Seams) (VS) IS 14181 (Part 2) Annex F NEXT© TM42
ASTM F963 (Tension Test) IS 14181 (Part 2) Annex G NEXT© TM45
ASTM F963 (Tension Test) (VS) IS 14181 (Part 2) Annex H NEXT© TM46
BS 3084 Annex B IS 14181 (Part2) Annex J TWC-TM202
BS 3084 Annex C ISO 4919 UNE 40902 (Ensayo de Traccion)
BS 3084 Annex D ISO 8124-1 (Tension Test) UNE 40902 (Ensayo de Traccion) (VS)
BS 3084 Annex E ISO 8124-1 (Tension Test) (VS)
BS 3084 Annex G JTA ST 2012 Compression Test

Stretch and Recovery

adidas® Group 4.12 EN 14704-1 Woven Fabric - Method A LTD 07
adidas® Group 4.27 EN 14704-1 Woven Fabric - Method A (kgf) LTD 10
adidas® Group 4.27 EN 14704-1 Woven Fabric - Method A (with Force Decay) LTD 11
adidas® Group 4.40 EN 14704-1 Woven Fabric - Method A (with Force Decay) LTD 15
Arcadia AG29 (kgf) LTD 19
Arcadia AG30 EN 14704-1 Woven Fabric - Method B LTD 27
Arcadia AG31 Part(i) EN 14704-1 Woven Fabric - Method B (with Force Decay) M&S P14 - FABRICS
ASTM D4964 EN 14704-2 Method A (Force Decay) M&S P14 - NARROW ELASTICS
ASTM D4964 (500mm/min) (LLL mod) EN 14704-3 Method A M&S P14 - NARROW FABRICS
ASTM D6614 FZ/T 70005 7.1.1 Woven Fabrics M&S P14A - LACE FABRICS
BS 4952 - including Tension Decay FZ/T 70005 7.1.2 Knitted Fabrics M&S P14A - NARROW LACES
BS 4952 (LLL 1.5 kgf) FZ/T 70006 - 8.2.1 and 8.4 Fixed Elongation (1 cycle) M&S P14B
BS 4952 (LLL 3.6 kgf) FZ/T 70006 - 8.2.2 Fixed Load (1 cycle) M&S P14C
BS 4952 (LLL 50%) FZ/T 70006 - 8.3.1.1 Fixed Elongation (1 cycle) M&S P15 PART 1
BS 4952 (LLL mod) FZ/T 70006 - 8.3.1.2 Fixed Elongation (5 cycles) M&S P15A
CPSD-SL-24964-MTHD FZ/T 70006 - 8.3.2.1 Fixed Load (1 cycle) M&S P15B
DBA RMQT-0I/020-035 FZ/T 70006 - 8.3.2.2 Fixed Load (5 cycles) NEXT© TM21
DECATHLON DS-275 GAP INC S1033 NEXT© TM21a
DECATHLON DS-275 GAP INC S1064 NIKE - Stretch & Elastic Properties - Part 1
DECATHLON DS-275 Jantzen Test Method 3 NIKE - Stretch & Elastic Properties - Part 2
DIN 53835 Part 13 JIS L1096 (8.15.1) Method A (2 cycles) Pacific Brands PB-001
DIN 53835 Part 14 JIS L1096 (8.15.1) Method A (5 cycles) Pacific Brands PB-027
DUPONT TTM 076 JIS L1096 (8.15.1) Method A (10 cycles) Pacific Brands PB-028
EN 14704-1 Knitted Fabric - Method A - Fixed Elongation JIS L1096 (8.15.2) Method B Puma PT85
EN 14704-1 Knitted Fabric - Method A - Fixed Load JIS L1096 (8.16.1) Method A Target TP 50&51
EN 14704-1 Knitted Fabric - Method A - Fixed Load (kgf) JIS L1096 (8.16.1) Method B TEMA ELASTICITY FT-07 Method 2
EN 14704-1 Knitted Fabric - Method A - Fixed Load (with Force Decay) JIS L1096 (8.16.1) Method C Triumph TP-22 (1 cycle)
EN 14704-1 Knitted Fabric - Method A - Fixed Load (with Force Decay) (kgf) JIS L1096 (8.16.1) Method D (200mm 100mm/min) Triumph TP-22 (2 cycles)
EN 14704-1 Knitted Fabric - Method B - Fixed Elongation JIS L1096 (8.16.1) Method D (200mm 200mm/min) TWC-TM179 Part A for Knitted Fabrics
EN 14704-1 Knitted Fabric - Method B - Fixed Load JIS L1096 (8.16.1) Method D (76mm 100mm/min) TWC-TM179 Part A for Woven Fabrics
EN 14704-1 Knitted Fabric - Method B - Fixed Load (with Force Decay) JIS L1096 (8.16.1) Method D (76mm 300mm/min)
EN 14704-1 Knitted Fabric - Method B - Fixed Load (with Force Decay) JIS L1096 (8.16.1) Method D (76mm 50mm/min) TWC-TM248
LTD 03
LTD 06

Titan 5kN / Titan 10kN - continued - Page 20

Tear, Peel, Adhesion and Delamination

AATCC 136	DIN 53507 Procedure A
adidas® Group 4.14	DIN 53507 Procedure B
adidas® Group 4.15	DIN 53530 (Sheet Specimens)
adidas® Group ST-07 - Peel Strength	DIN 53859 Part 4
adidas® Group ST-07 - Shear Strength	DIN 53859 Part 5
AS 2001.2.10	DIN 54310
ASTM D1876	EN 12773
ASTM D1894	EN 13514
ASTM D1938	EN 13571
ASTM D2212	EN 1392
ASTM D2262	EN 1464
ASTM D2724	EN 1875-3
ASTM D3167	EN 388 - Tear Resistance (6.3)
ASTM D4533	EN ISO 11644 (IUF 470)
ASTM D4704	EN ISO 13937-2
ASTM D4831	EN ISO 13937-3
ASTM D4851 - §14	EN ISO 13937-4
ASTM D5169	EN ISO 17698
ASTM D5170 (Analysis: 5 Highest)	EN ISO 17708
ASTM D5170 (Analysis: Integrator)	EN ISO 23910 (IUP 44)
ASTM D5587	EN ISO 2411
ASTM D5733	EN ISO 3377-1 (IUP 40-1) (large test piece)
ASTM D5735-95	EN ISO 3377-1 (IUP 40-1) (standard test piece)
ASTM D5884	EN ISO 3377-2 (IUP 8)
ASTM D6077	EN ISO 4674-1 - Method A
ASTM D6636	EN ISO 4674-1 - Method B
ASTM D7005	EN ISO 9073-4
ASTM D751 (Section 32)	FZ/T 80007.1 (5 High and 5 Low Peaks)
BS 3424 Part 7	FZ/T 80007.1 (Full Integration)
BS 3424:Part 5 Method 7A	GB/T 3917.2
BS 3424:Part 5 Method 7B	GB/T 3917.3
BS 3424:Part 5 Method 7C	GB/T 3917.4
BS 4303	GB/T 3917.5
DECATHLON DS-044	INEN 561
Decathlon DS-302	IS 15891 (Part 4)
DIN 53289	IS 6489 (Part 2)
DIN 53329 Procedure A (standard test piece)	IS 6489 (Part 3)
DIN 53329 Procedure B (large test piece)	IS 6489 (Part 4)
DIN 53356 (Shape A)	IS 7016 (Part 3) - Method A1
DIN 53356 (Shape B)	IS 7016 (Part 3) - Method A2
DIN 53357 (Method A)	IS 7016 (Part 5)

Tensile Strength

AATCC/ASTM TS-010	ASTM D2256-10
adidas® Group 4.10	ASTM D3354
adidas® Group 4.11	ASTM D3759M Procedure A
Arcadia AG37	ASTM D3759M Procedure B
AS 2001.2.3.1	ASTM D4632
AS 2001.2.3.2	ASTM D4912
ASTM D1578 - Option 2	ASTM D5034
ASTM D1578 - Option 3	ASTM D5035
ASTM D1682	ASTM D6241
ASTM D2208	ASTM D6479
ASTM D2209	ASTM D6775
ASTM D2211	BS 1932-2
ASTM D2256	BS 2576

ISO 11857
ISO 17696
ISO 20866
ISO 20872
ISO 20874
ISO 4578
JIS L1085 (6.13)
JIS L1085 (6.6.2)
JIS L1085 (6.6.3)
JIS L1086
JIS L1096 (8.17.1) Method A-1
JIS L1096 (8.17.1) Method A-2 (Wool Fabrics)
JIS L1096 (8.17.2) Method B
JIS L1096 (8.17.2) Method C
LLL-001 (IP units)
LLL-001 (SI units)
LLL-002 (IP units)
LLL-002 (SI units)
M&S P13
M&S P13A
M&S P35
M&S P42
M&S P98
NEXT® TM25
NF G62-021 - Peeling Test
NF G62-021 - Shearing Test
NIKE TEST EQ01
NIKE TEST G77 - Textile
NWSP 100.2
NWSP 100.3
NWSP 401.0
QB/T 2711
Renault D41 1015/--E
SABS SM 637
SANS 11644 (IUF 470)
SATRA TM30
SIS 25 12 31
TWC-TM264

BS 3144 - Ball Burst Test
BS 3424:Part 4 Method 6
BS 5131-5.11
DIN 53504
DIN 53858
DIN 53934
DIN EN 14716
EN 12311-1
EN 13522
EN 14410 Method A
EN 14410 Method B
EN 29073-3
EN ISO 13934-1

Tensile Strength (continued)

EN ISO 13934-2	ISO 29864 Method A
EN ISO 1421 Method 1	ISO 29864 Method B
EN ISO 1421 Method 2	ISO 4637 (BS 903-A27)
EN ISO 17695	ISO 5081
EN ISO 2062	ISO 5082
EN ISO 3376 (IUP 6) (large test piece)	ISO 6939
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ISO 105-F10	Multifibre 50M	702-502
ISO 105-F10	Multifibre Gimped	702-520
ISO 105-X12	BHT-Free Polythene Film	706-792
ISO 105-X18	Test Papers 100, pack 150	706-720
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Standard Bodies - Reference List

Prefix

AATCC
 adidas®
 AG / Arcadia
 AS/NZS
 ASTM
 BIS IS
 BS
 CAN/CGSB
 CFR
 DBA
 DIN
 DS
 Dupont
 EN / EN ISO
 ERT
 FTMS
 FZ/T / GB / GB/T / SC/T / QB/T
 GAP INC
 H&M
 ICI
 IEC
 IKEA
 IMO
 INEN
 ISO
 IUF
 IUP
 IWTO
 Jantzen
 JIS
 JTA
 LS&CO
 LTD
 M&S
 Mercedes Benz
 NEXT
 NF G
 NIKE
 PAPTAC
 PB
 PSTC
 PV
 Ralph Lauren
 Renault
 SABS
 SANS
 SATRA
 SFS
 SIS
 SLF
 SN
 TAPPI
 TEMA
 TESCO
 Triumph
 UNE
 UNI
 VDA
 Volvo
 Woolmark TM / TWC-TM
 WSP

Standard Body

AATCC American Association of Textile Chemists and Colorists
 adidas® Group adidas Group
 Arcadia Arcadia Group Limited
 AS Standards Australia
 ASTM American Society for Testing and Materials
 BIS Bureau of Indian Standards
 bsi The British Standards Institution
 CAN National Standard of Canada
 CFR Code of Federal Regulations
 DBA DB Apparel
 DIN Deutsches Institut für Normung e.V.
 Decathlon Decathlon
 Dupont Dupont
 CEN Comité Européen de Normalisation
 EDANA European Disposables and Nonwovens Association
 FTMS Federal Test Method Standard
 SAC Standardization Administration of the People's Republic of China
 GAP INC GAP INC
 H&M H&M Group
 ICI Imperial Chemical Industries
 IEC International Electrotechnical Commission
 IKEA IKEA GROUP
 IMO International Maritime Organisation
 INEN Servicio Ecuatoriano de Normalización
 ISO International Organization for Standardization
 IULTCS International Union of Leather Technologists and Chemists Society
 ALCA American Leather Chemists' Association
 IWTO International Wool Textile Organisation
 Jantzen Jantzen
 JIS Japanese Industrial Standards
 JTA Japan Toy Association
 LS&CO Levi Strauss
 LTD Limited Brands
 M&S Marks & Spencer plc
 Mercedes Benz Mercedes Benz
 NEXT NEXT Plc
 AFNOR Association Française de Normalisation
 NIKE NIKE
 PAPTAC Pulp and Paper Technical Association of Canada
 Pacific Brands Pacific Brands
 PSTC Pressure Sensitive Tape Council
 PV Volkswagen Group
 Ralph Lauren Ralph Lauren Corporation
 Renault Renault Group
 SABS South African Bureau of Standards
 SANS South African Bureau of Standards
 SATRA SATRA Technology Centre
 SFS Finnish Standards Association
 SIS Swedish Standards Institute
 SLTC Society of Leather Technologists and Chemists
 SNV Swiss Association for Standardization
 TAPPI Technical Association of the Pulp and Paper Industry
 TEMA TEMA
 TESCO TESCO
 Triumph International Triumph International
 AENOR La Asociación Española de Normalización y Certificación
 UNI Ente Nazionale Italiano di Unificazione
 VDA Verband der Automobilindustrie e. V.
 Volvo Volvo Group
 Woolmark Woolmark
 WSP World Strategic Partners (INDA / EDANA)

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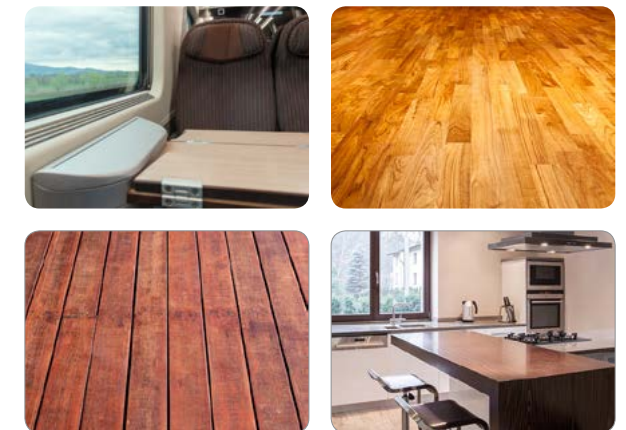
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