



OPERATOR'S GUIDE

WickView **Moisture Management Tester**

Covering Serial Numbers
1932-19-1000 & upwards.

Published by:

JAMES HEAL LTD.
RICHMOND WORKS
HALIFAX
WEST YORKSHIRE
HX3 6EP
ENGLAND

TELEPHONE +44 (0) 1422 366355
FACSIMILE +44 (0) 1422 352440

E-mail info@james-heal.co.uk
Internet http://www.james-heal.co.uk

© 2019

TABLE OF CONTENTS

TABLE OF CONTENTS	2
James Heal.....	4
Setting the Standard.....	4
Areas of Expertise	4
Introduction	5
WickView Moisture Management Tester.....	5
Features & Benefits	5
Service & Calibration	5
Technical Assistance.....	5
General Information	6
Revision History.....	6
Scope.....	7
Description of Moisture Management	7
HEALTH & SAFETY	7
Safety Summary	8
Safety Precautions.....	8
Operator Safety	9
Cleaning & Maintenance	9
Instrument Specification	9
Preinstall Checklist	10
Area Planning	10
Installation	11
Delivery	11
Electrical Specifications	11
Power Cord	11
Receiving Inspection	12
Unpacking	12
Checklist.....	12
Moving the machine	12
Installation Procedure	13
TestWise Laptop/PC Hardware Requirements	13
Product Overview.....	14
External instrument components.....	14
Operation & TestWise for WickView	15
Priming the Machine.....	15
OPERATION & TESTWISE FOR WICKVIEW	22
Loading a Specimen.....	22
Changing Test Orientation.....	25
Test Preparation	26
Test Procedure.....	30
TestWise & Results analysis.....	34
Importing specimen test data & data set up tips.	34
Result Settings and Evaluation.....	39
Specimen Metrics Table.....	40

Cleaning and Maintenance	47
Fault Finding	52
Spares	52
James Heal Service & Calibration	53
Software	53
EU Conformity.....	53
EU Declaration of Conformity.....	54
UKCA Declaration of Conformity.....	55

JAMES HEAL

At James Heal, we are dedicated to designing and developing high precision testing instruments and test materials for physical and colour fastness testing. Our worldwide Service and Calibration division and expert technical assistance complement our product range, adding real value to your laboratory testing activities.

Setting the Standard

We are committed to forming close relationships and have established numerous partnerships within the textile industry, from trade and standards organizations, to test houses, customers and distribution partners.

With a heritage spanning more than 140 years, we have evolved and grown through a culture of continuous improvement, resulting in a thorough understanding of the applications, operating conditions and requirements of customers worldwide – from independent testing laboratories and test houses, to fabric suppliers, manufacturers and retailers.

Using knowledge and expertise, we consistently set the industry standard through product innovation and technology, with customer and user needs, present and future, driving our technological advancements. You can be assured that with James Heal, you will always receive the highest levels of product quality and customer service. We have Agents and Distribution partners all over the globe, ensuring locally available product whenever, and wherever you need it.

Areas of Expertise

Textile: Colour Fastness

- Chlorinated Water
- Dry Cleaning
- Dry Heat
- Hot Pressing
- Laundering
- Light
- Perspiration
- Phenolic Yellowing
- Print Durability
- Rubbing
- Washing
- Water

Textile: Physical

- Abrasion
- Bursting Strength
- Compression and Puncture
- Crease and Wrinkle Recovery
- Crimp
- Drape
- Durability
- Flammability
- Mass per unit area
- Pilling and Fuzzing
- Security of Attachments
- Seam Slippage
- Shrinkage
- Snagging
- Spray Rating
- Stretch and Recovery
- Surface Deterioration
- Tear Strength
- Tensile Strength
- Washing and Drying

Non-Textile

- Bursting strength of nonwovens, plastics, paper and medical products
- Micro-scratching of laminates, wooden, painted, automotive and high gloss surfaces
- Physical and colour fastness testing of leather
- Rubbing fastness of laminates and wooden surfaces
- Tear strength of paper and plastic

INTRODUCTION

WickView Moisture Management Tester

WickView has been designed with James Heal's unique product signature and has been produced completely with the user in mind. We have combined James Heal's technical and performance expertise, with intuitive design and operation to produce the most ergonomic and user-friendly instrument.

Please read this operator's guide before commencing installation and use of the WickView instrument.

Features & Benefits

- TestWise Integration
- Continued software and test development

Service & Calibration

- Worldwide Service
- ISO 17025 based calibration service
- 18 Months Warranty

Technical Assistance

- Operator training
- Knowledge transfer
- Applications support
- Engineering support

GENERAL INFORMATION

Manufactured by:
James Heal™

Richmond Works
Lake View
Halifax
HX3 6EP

Telephone No: 01422 366355

This manual is valid for the James Heal™ WickView, Moisture Management Tester.

This manual covers the operation and day to day maintenance for the James Heal™ WickView, Moisture Management Tester. It has been written and illustrated using the best possible information at the time of publication. The manual should be regarded as part of the equipment and should be kept with it throughout its working life.

Any difference between the manual and the equipment reflect improvements introduced after the publication of the manual. Any amendments received should be recorded below and incorporated in the relevant part of the manual.

Changes, technical inaccuracies and typographical errors will be corrected in subsequent revisions.

As part of our policy for continuous product development and improvement, James Heal™ reserves the right to make changes in design and specification without notice.

Revision History

See front cover for Publication number, e.g., 290-1523-1

Revision	Date	Originator	Details Of Revision
1	13/12/19	AC	Op Guide Created
2	09/04/20	SEW	Primer Update
3	21/10/21	LK	Primer Cartridge pictures included
4	23/02/23	LK	JHTM-017 added
5	22/02/24	HW	USB Cable update

Scope

WickView moisture management tester is used to perform analysis on the movement of moisture through fabric.

It is a state-of-the-art instrument using advanced imaging to track and record moisture transfer through a material, helping understand its effectiveness at moisture management and wicking behaviour.

Description of Moisture Management

Moisture management is the controlled movement of liquid (perspiration) from the skin surface to the environment through a fabric, an important factor in comfort and maximizing performance of performance apparel.

HEALTH & SAFETY

- Note: All operators and customer maintenance personnel should familiarise themselves with this manual before using or servicing the equipment.
- WickView has a mass of approximately 48kg, therefore assistance from a colleague or suitable lifting apparatus is recommended.
- WickView complies with the EU & UKCA Conformity in full (see pages 49-51 for full details)
- Ensure the instrument is isolated from the electrical supply before removing any covers. Covers should only be removed by a qualified Engineer or Electrician.
- Never use [WickView](#) for anything other than what it is designed for.
- Have the instrument serviced and calibrated at least once a year by a James Heal Service and Calibration Engineer.

Safety Summary



Water – Warning



Electric Shock – Warning

No access to the internal workings of the WickView by operators, only by qualified and trained personnel. If users see exposed or damaged power cables do not use or touch the instrument and immediately seek technical assistance.

Mains switch is located on the left hand side near the support column of the machine.



Access – Warning

Do not allow general access to WickView only to those competent and trained personnel. WickView should be stored in a controlled environment where only authorised personnel have access.



Manual Handling – Warning

Avoid lifting or moving the test equipment without relevant manual handling training.

Warranty – Warning

Do not attempt to gain access to the internal workings of the WickView, if tampered with this will invalidate your warranty.

Note: The equipment must only be operated in an environment with adequate lighting with no shadow or stroboscopic effects.

Safety Precautions



Warning

Always observe the following safety precautions.

Ensure electrical outlet is dedicated (no other equipment on the same circuit breaker).

Only the voltage indicated on the unit.

Serial No./Rating Plate is connected to the unit.

It is recommended that the mains electrical isolation switch be lockable and located in a visible position.

Do not operate instrument with a damaged power cord until it has been examined and repaired by an authorised service representative.

Ensure power cord is protected from contact with hot surfaces.

The power cord must not be subject to foot or machine traffic and must not be placed on the floor without adequate protection.

Always have electric box covers in place when instrument is plugged in and the mains isolator switch is ON.

Do not use an extension cord.

Do not defeat or bypass built-in equipment safety features.

Any maintenance, servicing or adjustments must only be carried out by suitably skilled or properly instructed/supervised personnel.

Wear appropriate Personal Protective Equipment (PPE) when performing regular testing tasks and performing maintenance.

Operator Safety

Always isolate from the electrical supply before carrying out authorised maintenance work on the machine.

Access to the main electrical power isolator must not be obstructed.

The area around the machine should be kept clean, dry and clear of any waste material.

Any maintenance, servicing or adjustments must only be carried out by suitably skilled or properly instructed / supervised personnel.

Cleaning & Maintenance

Cleaning and maintenance should be only carried only by trained/competent personnel.

INSTRUMENT SPECIFICATION

	James Heal™ WickView
Machine Only W x D x H (mm / inches))	W 510 x D 625 x H 447.5mm W 20 x D 24.6 x H 17.62"
Weight (kg / lbs)	48kg / 106lbs
Electrical Requirements	Voltage: 100-240Vac Frequency: 50/60Hz Current: 1A

Preinstall Checklist

WickView is heavy instrument & should be moved with care.

WickView is delivered on a wooden palette. A forklift truck, hydraulic pump trolley or other suitable devices will be required to move the packing case as near as possible to the final location.

WickView will need to be positioned near to an electrical supply & computer.

An electrician should provide the necessary wall outlets prior to installation.

Note: The electrical installation should conform to the codes and requirements of the country or locality in which the equipment is to be installed.

Due to the dependence on the instruments precise test results care needs to be taken when installation takes place to prevent damage which could result in invalid results.

1. The final location of the WickView has a weight bearing capacity of at least **48kgs.**
2. The final location is set at a usable access height, for users to load the samples and interact with the touch screen.

Area Planning

Room Layout

Provide adequate space for installing and operating the equipment. A minimum of 1000mm/39.4" in front of the machine is recommended.

Work Surface

Provide a stain and chemical resistant work surface for ease of cleaning.

Work Surface Level

The work surface should be flat and level in both directions.

Work Surface Load-Bearing Capacity

The work surface must be capable of supporting the operating weight of the equipment.

Installation

The James Heal™ WickView instrument will be shipped in one crate, if ordered as a standalone instrument. The contents of which will need transporting to the install site by James Heal or associated agent.

James Heal or associated agent will install this instrument, we advise all installers to be familiar with the Safe Working Procedure Document of the WickView before commencing installation.

Prior to installation check content of delivery using the checklist on page 12.

Delivery



Handling Equipment

Provide the necessary equipment, such as genie lift or forklift for unloading the unit.



Personnel

Provide personnel for unloading, unpacking and transferring the equipment.

Unit

Minimum width: 515mm

Minimum height: 450mm

Minimum Depth: 625mm

Minimum weight: 48kg

Electrical Specifications

Voltage: 100-240Vac

Frequency: 50/60Hz

Current: 1A

Power Cord

The equipment is provided with a 2 meters long power cord for EURO, US and UK mains.

RECEIVING INSPECTION

Your James Heal™ WickView was carefully inspected and tested prior to shipment. Upon its arrival, inspect the crate for damage. Unpack the machine as soon as possible and conduct a thorough examination of the unit and its components. Do this in the presence of the carrier if at all possible. If damage is noted, take photographs of the damaged portions and immediately file a claim with the carrier. NOTE: If the carrier is not notified within 48 hours of delivery, they cannot be held responsible.



Warning

Beware of sharp edges, splinters, pinch points, exposed nails and staples when unpacking.

Unpacking

Checklist

List of components/assemblies that will be delivered:

Stock Code	Item name	Quantity
905-201	WickView Instrument	1
574-005	Sample Cassette (1mm)	1
381-119	5mm A/F (M6) Metric Ball Point Screwdriver	1
716-827	Pyrex Centrifuge Tube (with lid) 122 x 29 mm	1
142-304	Mains Lead Straight (US, EURO, UK)	1
574-205	Priming Cassette	1
794-961	TestWise Dongle	1

Moving the machine



The equipment is heavy. Use sufficient personnel and/or lifting devices for its movement. Provide the necessary equipment, taking note of the centre of gravity to ensure the lift is completed in a safe manner. WickView should **only** be lifted from the base, never lift by the test chamber!

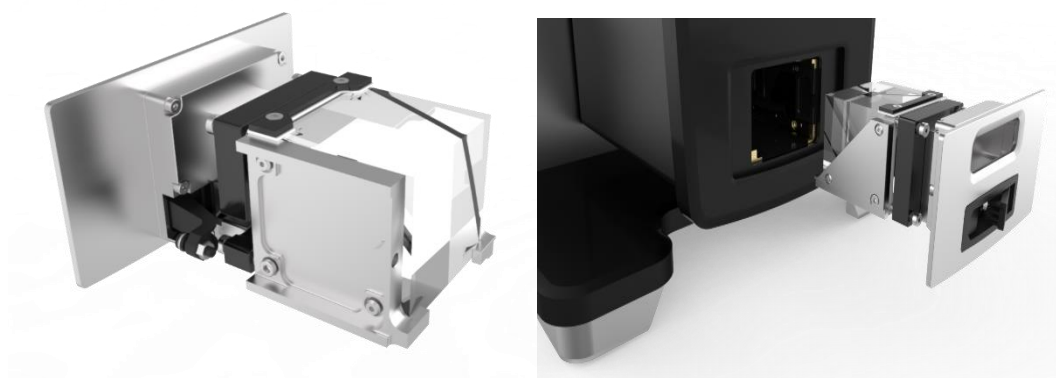
Provide adequate space for installing and operating the equipment.

The floor and work surface must be flat and level and capable of supporting the operating weight of the equipment.

Installation Procedure

Ensure WickView is placed on an appropriate supported work surface at the right height for operatives to load test samples and interact with the touch screen comfortably.

- Stand the instrument on a firm and level surface.
- Ensure there is enough room around the instrument to be able to change the orientation with no obstructions
- Unwrap the prism & prism housing, place the prism in the housing & gently tighten up the screws ensuring the prism is sat in the housing correctly to ensure no damage is caused to the prism.
- Place the prism housing into the machine



- Connect the electrical power supply to the mains input using the lead provided.
- Connect a computer/laptop to the USB output cable
- Load the TestWise Dongle into the computer & install TestWise for WickView software
- Switch on WickView (on/off switch is located at the rear of the machine)

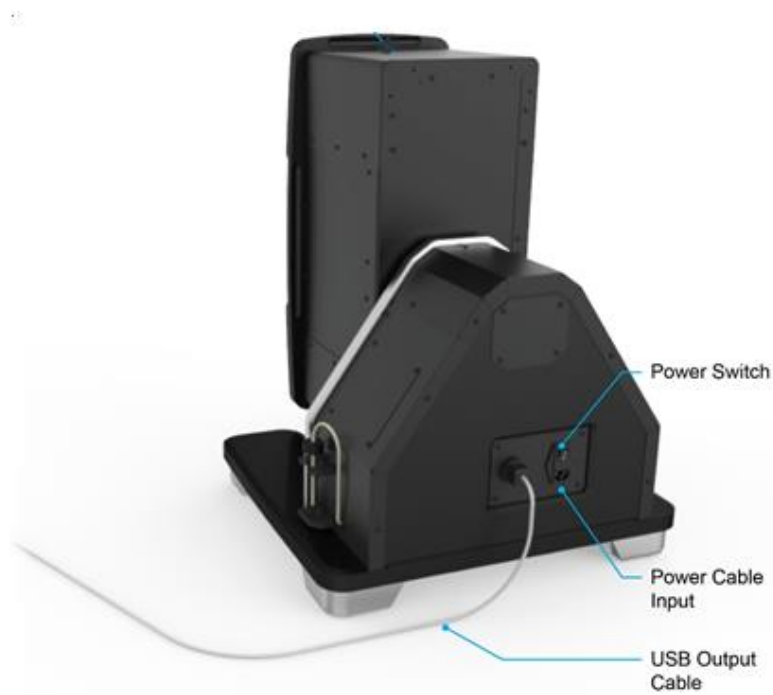
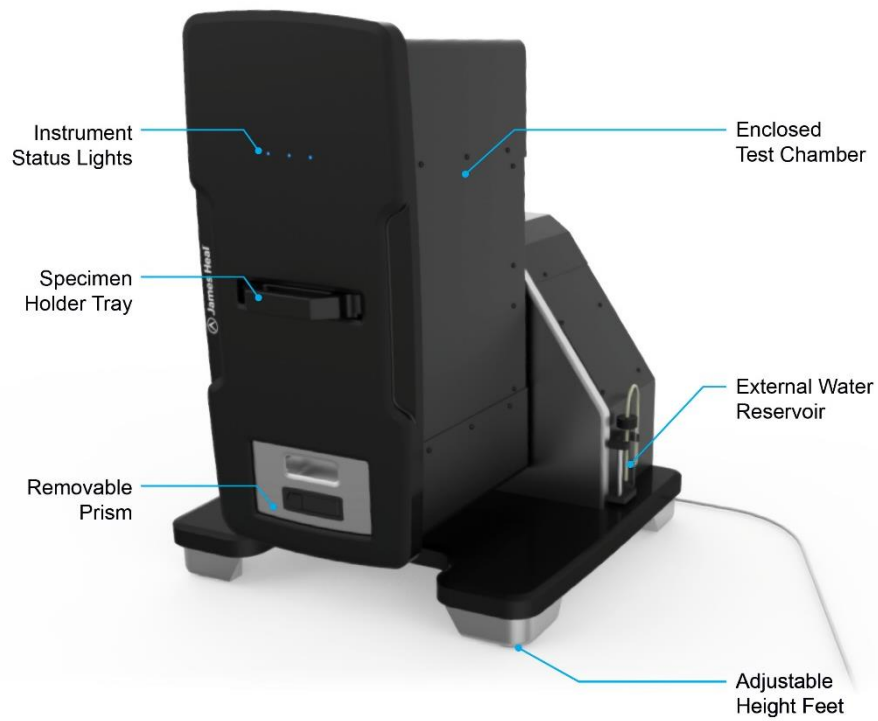
TESTWISE LAPTOP/PC HARDWARE REQUIREMENTS

To take full advantage of TestWise for WickView you will need a laptop or computer that conforms to the following minimum specification:

- Windows 10 64-bit with .NET framework 4.5.2
- 1 USB 3.0 port minimum
- Core i5 Intel processor minimum, 4th generation or higher
- 8Gb RAM minimum
- 128Gb SSD Hard disk minimum
- Dedicated graphics adapter with unshared display memory (e.g. NVidia, AMD, Intel)
- Full HD resolution (1920 x 1080) screen or higher

PRODUCT OVERVIEW

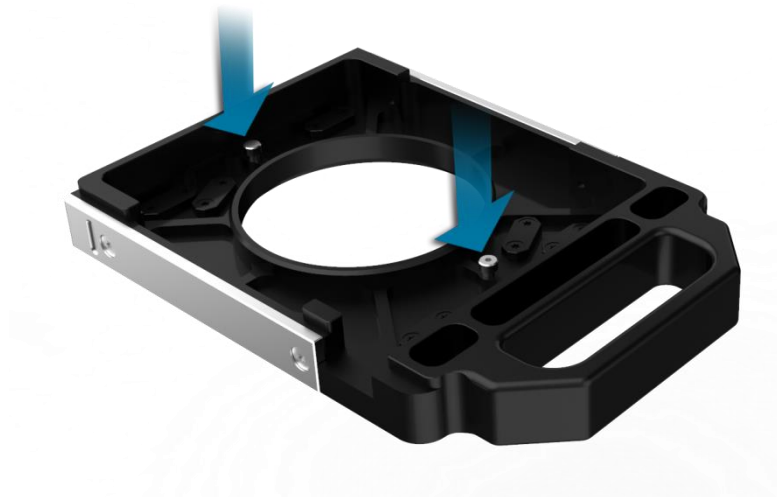
External instrument components



OPERATION & TESTWISE FOR WICKVIEW

Priming the Machine

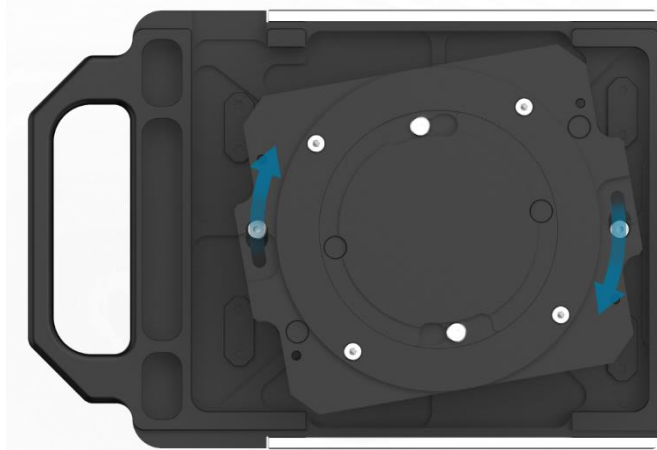
1) Select the WickView Priming/Calibration cassette, indicated by fixing points within the base of the cassette.



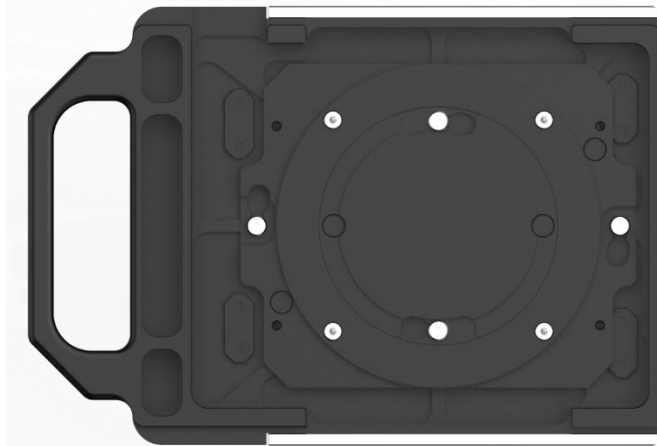
2) Place priming cartridge into calibration cassette.



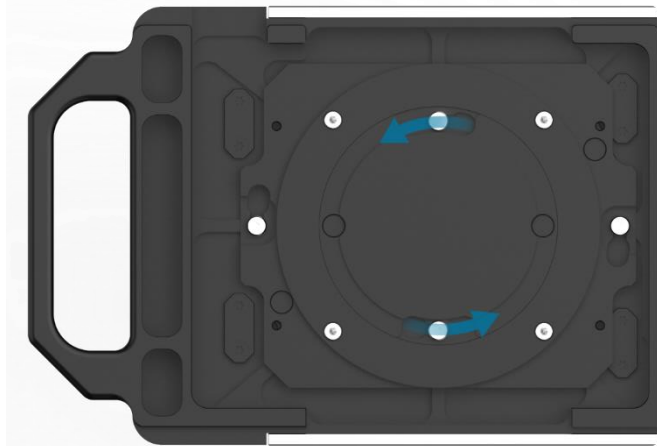
3) Align and lock priming cartridge.



4) Locked Position



5) Unlock priming cassette back plate



6) Remove unlocked back plate.



7) Insert priming foam into holder.



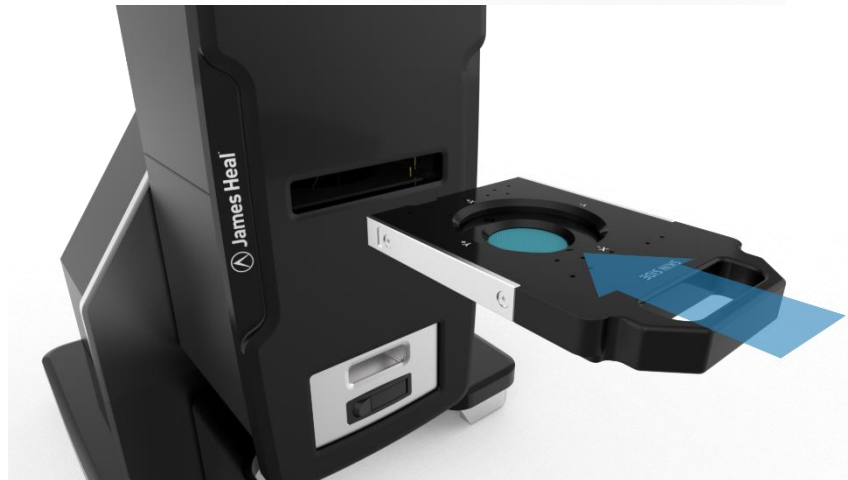
8) Return the back plate of the priming cassette to lock the priming foam in place.

The cassette is ready to use for priming.

Return tray to test housing.



Return tray to test housing.



Ensuring the cassette is fully in place.



Ensure:

(a) The external glass water reservoir is filled with deionised water (**note:** deionised water in the glass reservoir should be changed daily to ensure the water is fresh)

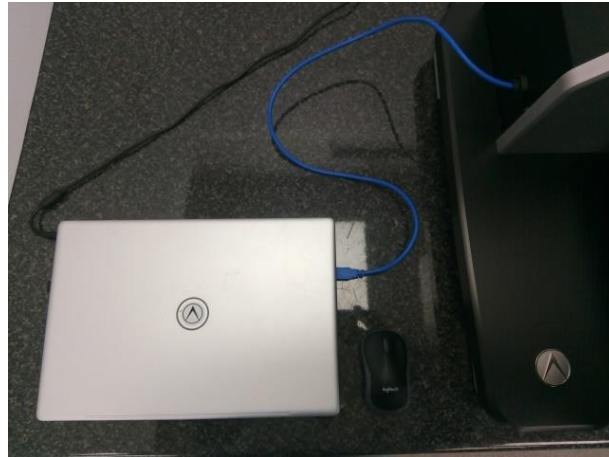


(b) The unit is plugged into the power supply and switched on



(c) The unit is attached to a computer with a power supply & powered up.

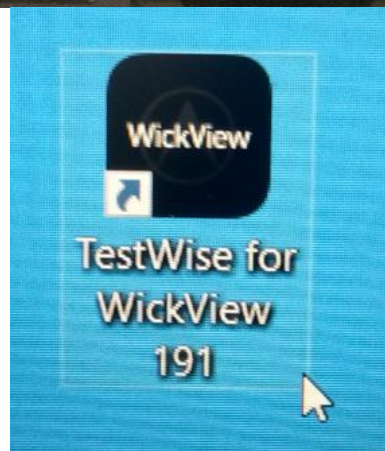
NOTE: the blue USB cable from the WickView should be plugged directly into the PC, do not use Hubs or extenders.



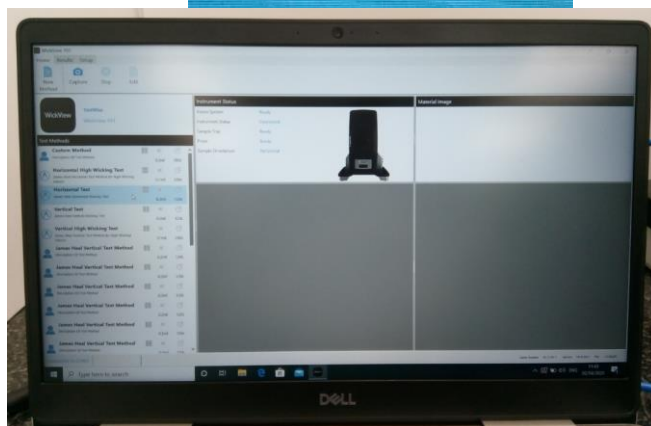
The set up should look like this



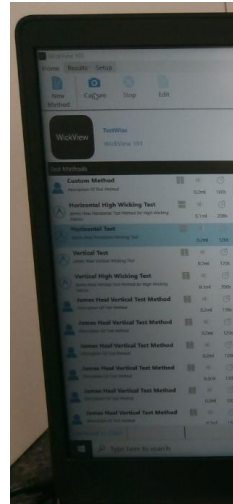
Select the WickView Icon (software must have been previously installed).



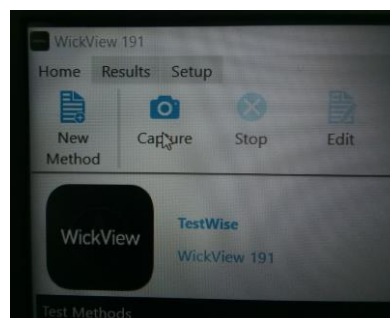
The Home screen will appear



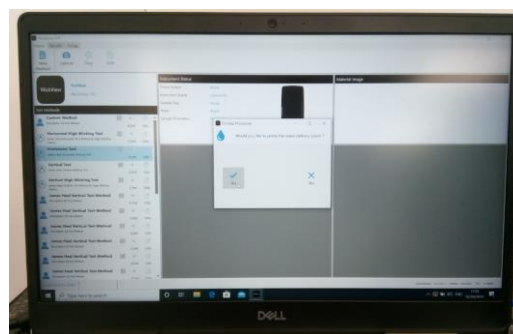
Select & highlight the required test



Select 'Capture' Icon

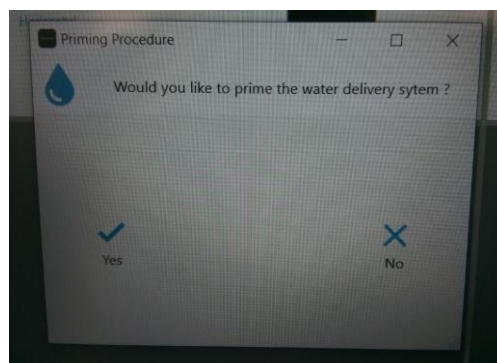


The Priming Procedure prompt box will appear in the centre of the screen

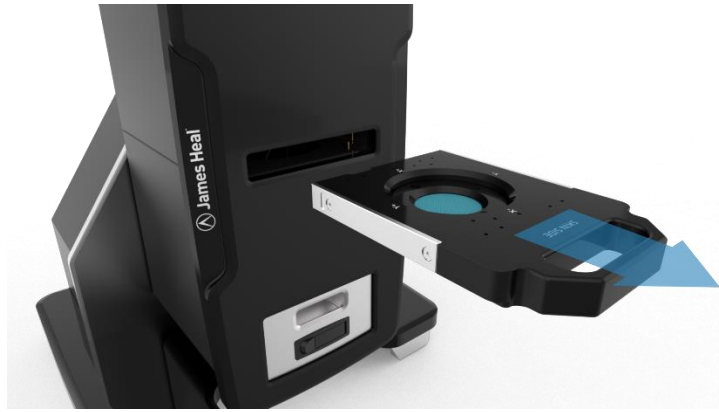


The priming cartridge should be inserted into WickView after each test & before the orientation is changed. This will ensure any loose water particles are captured prior to a new test starting

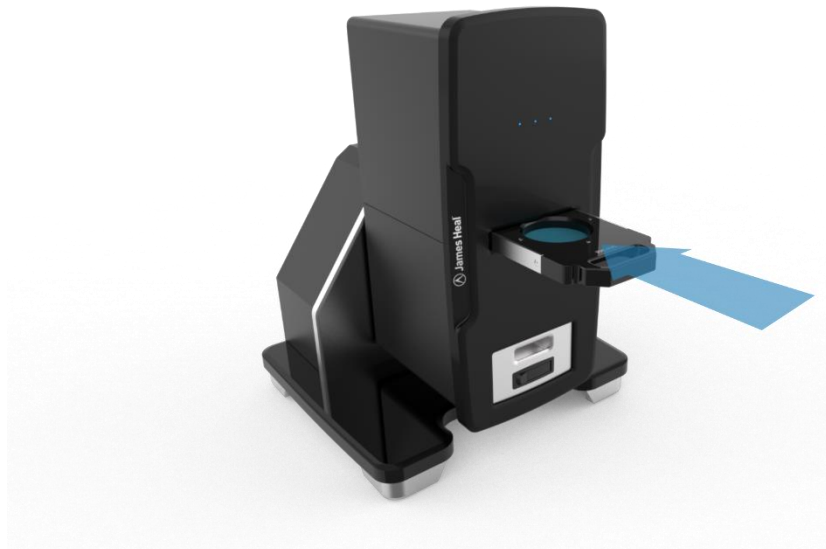
Select 'Yes' to begin priming



Once priming is completed remove the priming cassette



Replace with the prepared specimen cassette



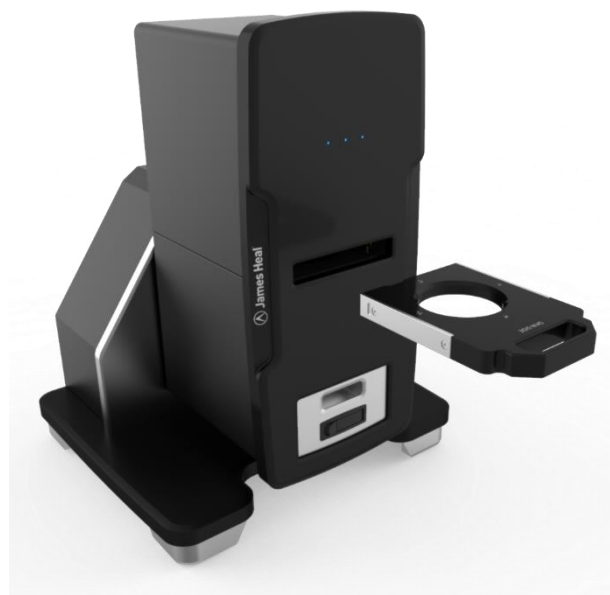
OPERATION & TESTWISE FOR WICKVIEW

Loading a Specimen

1. WickView – loading a specimen



2. Pull the cassette from the test housing.



3. Flip the cassette to reveal the clamping mechanism



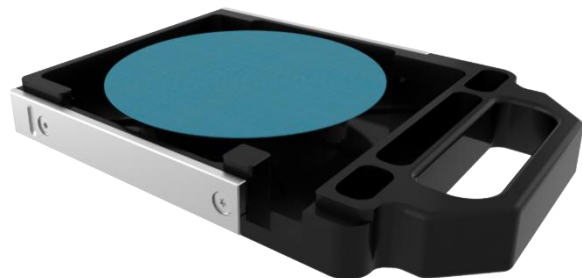
4. Loosen the bolt on the fabric clamp



5. Lift and remove the fabric clamp



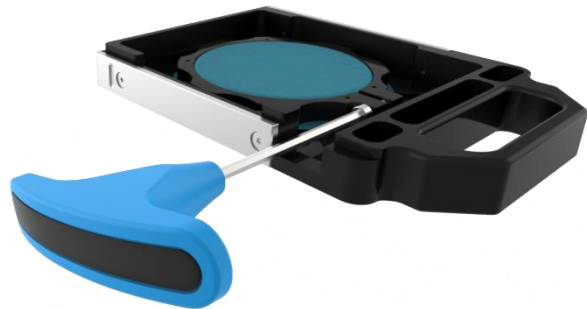
6. Place fabric specimen on to the surface of the WickView cassette



7. Place the fabric clamp over the fabric ensuring the fabric is crease free and flat



8. Tighten the clamp, holding the fabric firmly in place



9. Flip the cassette back over and insert into the test chamber



Changing Test Orientation

View right hand face of the WickView



Rotate the test chamber anti-clockwise until it locks in an upright position

Repeat the process to return the test chamber to its original position



Test Preparation

1. Ensure WickView is plugged into a power supply and powered on.
2. Connect your computer or laptop using the USB 3.0 cable found at the rear of the WickView. The WickView will only work when connected to a USB 3.0 port.

It must not be connected to another USB hub or extension lead.

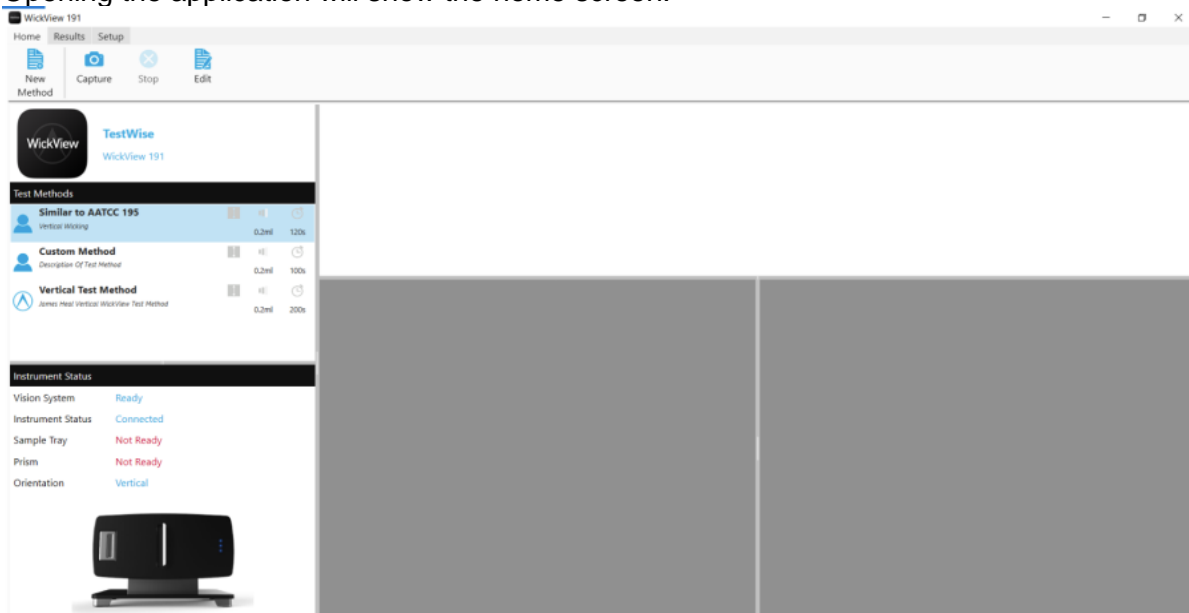
A USB 3.0 input can be identified by the “super speed” icon (SS) located near the USB port or a blue female USB port on your computer. See identifiers below.



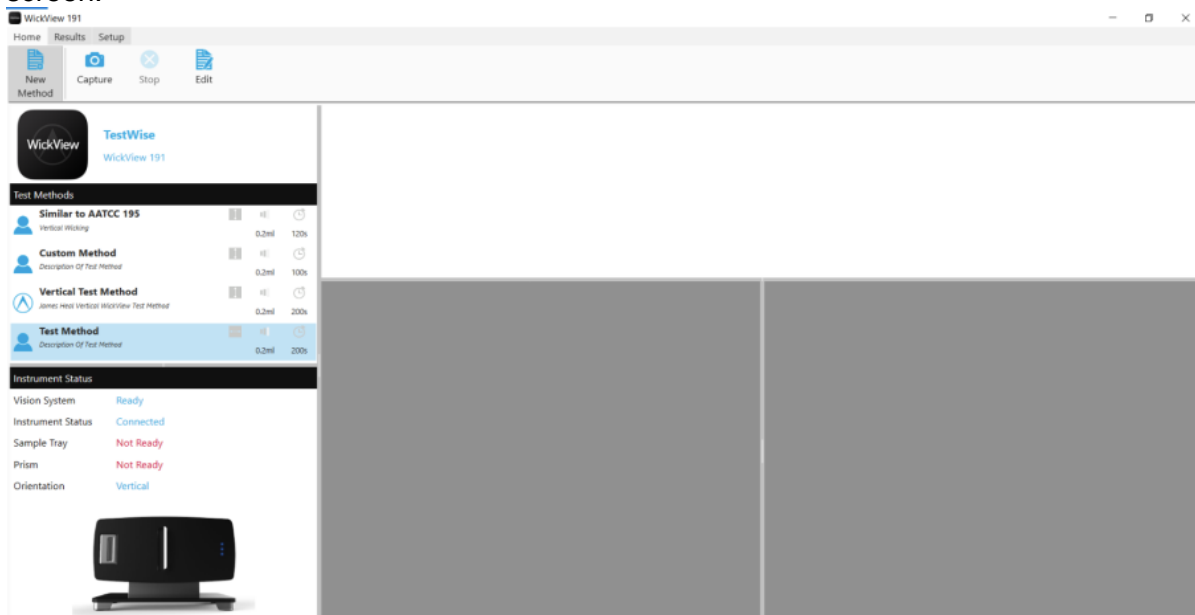
3. Before starting a test load a water absorbent lint free fabric into the test chamber ready to prime WickView.
4. Follow the instructions on how to load a test specimen in the section above. (page 22).
5. Once you have loaded the priming sample into the WickView, open TestWise for WickView. If TestWise for WickView is installed on your computer it can be searched for by looking for the application TestWise for WickView alternatively the icon below.



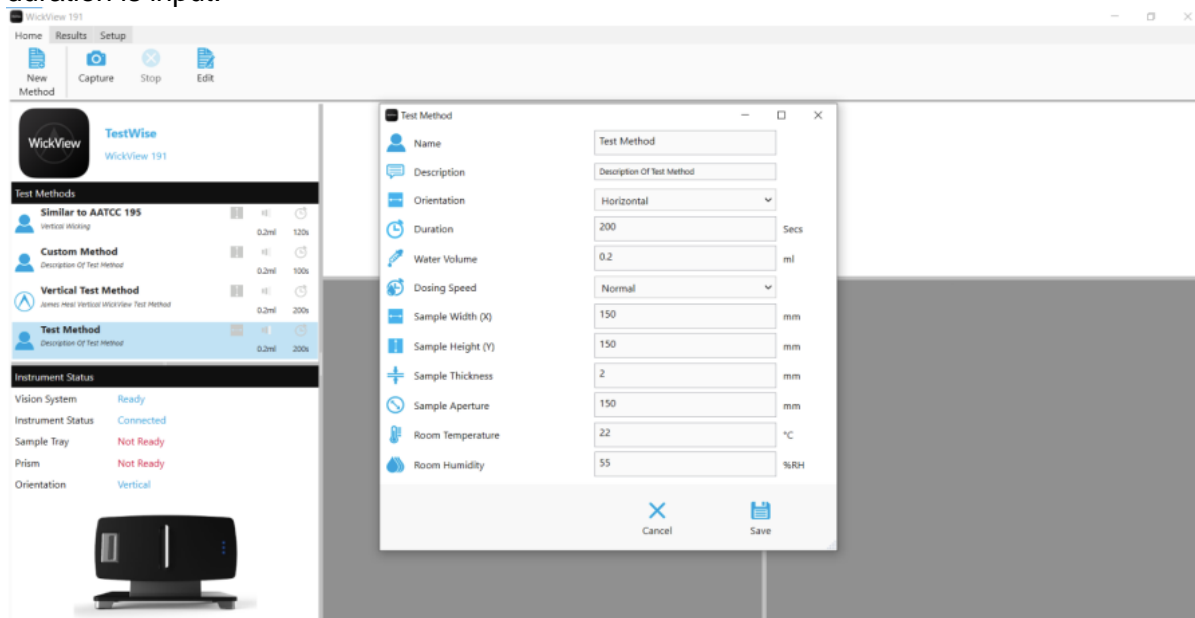
6. Opening the application will show the home screen.



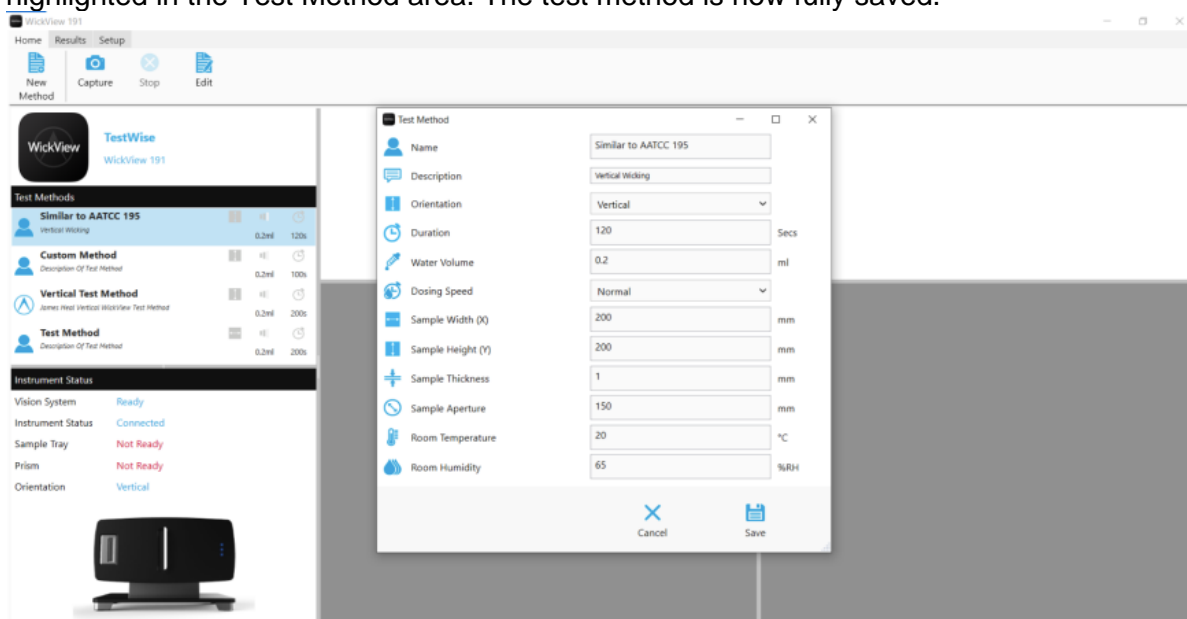
- To create a new test method, select 'New Method', a template named 'Test Method' will appear beneath any existing test methods in the Test Methods section of the screen.



- The Test Method content box will appear – here the required parameters are set for the new test method. Pay special attention to ensure the correct dosage and test duration is input.



9. Once completed, select 'Save', the box will disappear and the new test will appear highlighted in the Test Method area. The test method is now fully saved.



10. Before beginning of a test the WickView, the dosing system needs to be primed.

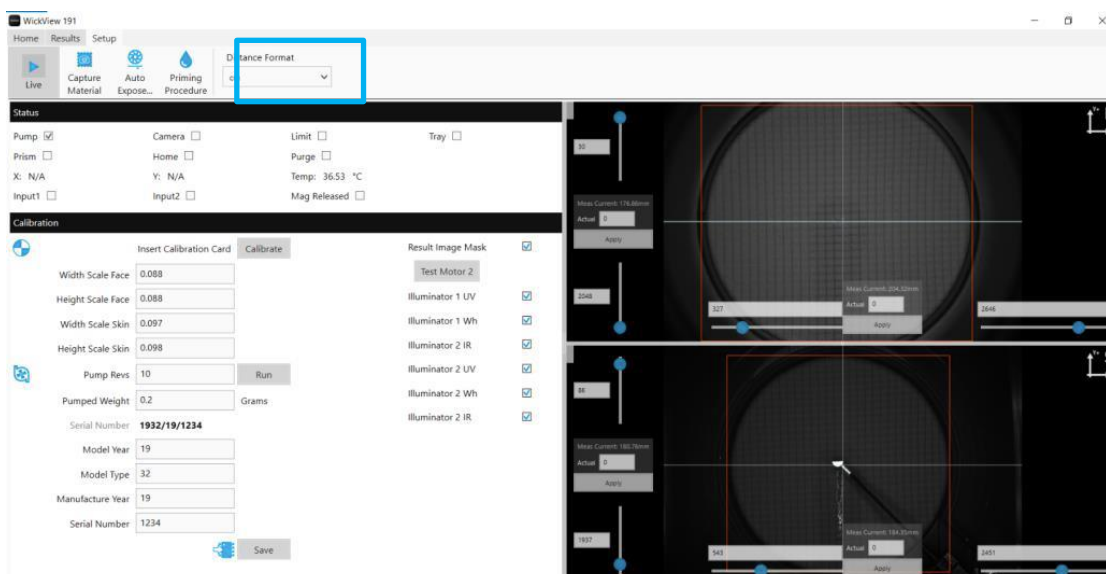
There are two ways to do this: by selecting the 'Set-Up' tab as outlined here or as a function within the test itself (outlined further down this document).

As stated earlier – ensure that there is a lint free water absorbent fabric loaded into the **priming** cassette and not the fabric specimen.

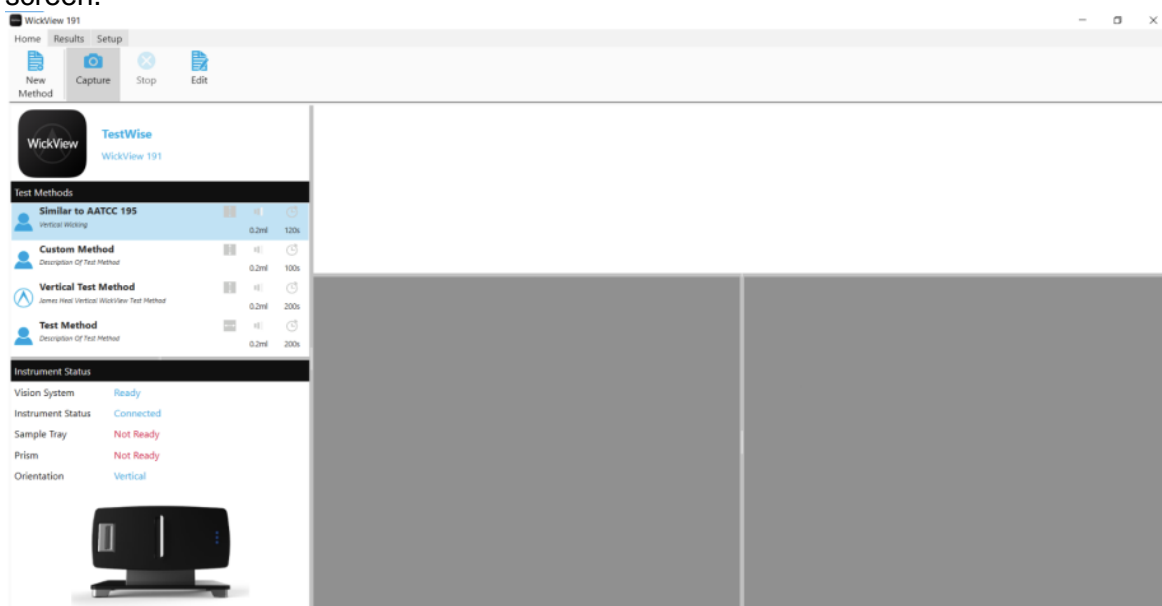
Select Live to open the cameras & view the fabric on the cassette.

Then select Priming Procedure to place a priming dose of water onto the lint free water absorbent fabric in the priming cartridge.

At this point you can also select the units in which you would like your test results to be recorded in using the distance format drop down (mm, cm and inches). *This can be changed later when evaluating results.*



11. Once the priming procedure is completed (after 15 seconds) return to the Home screen.

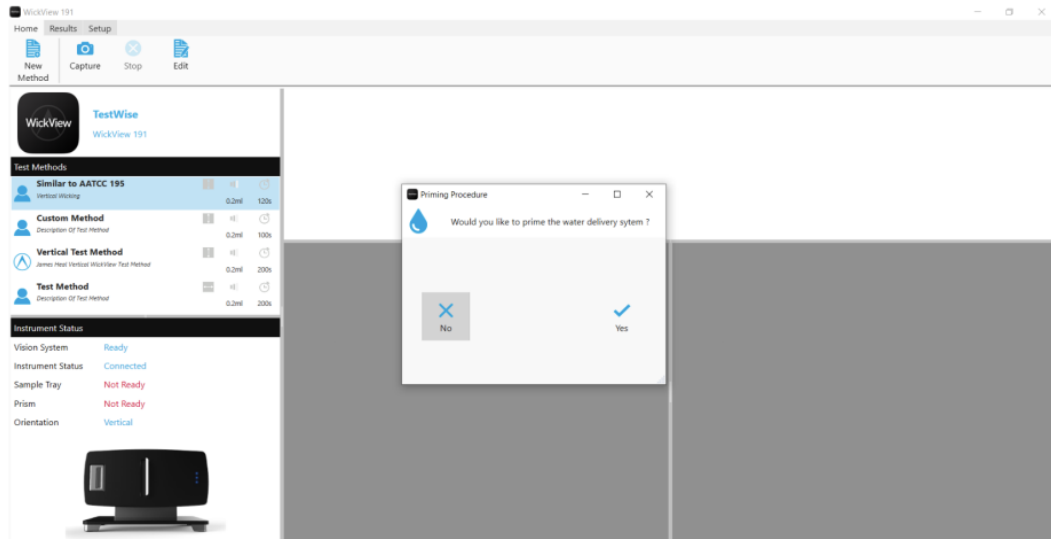


12. Remove the priming cassette and check that the surface of the priming material is wet. If the surface is not wet, perform the prime procedure again until the specimen appears to have absorbed water. *(You will also be able to see water running onto the fabric in the live view.)*
13. Once primed, remove the priming cartridge with the lint free water absorbent fabric.
14. Take the testing cassette with the sample to be tested in it & place it in WickView.

Test Procedure

1. From the home screen select Capture a Priming Procedure box will appear if you have already primed as outlined in the section 9.3 Test Preparation select 'No'.

If Priming has not yet been conducted select 'Yes' and the priming function will begin, priming the material placed in the test chamber. Ensure this material is your priming material and not your test specimen.

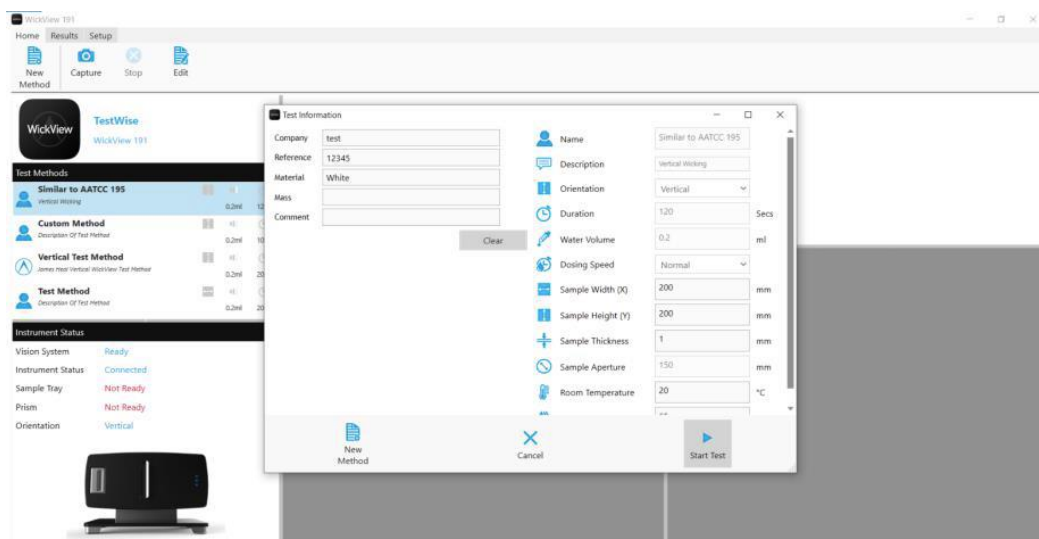


2. Once priming has been completed or 'No' is selected, the Test Information box will appear.

This is where the individual specimen information is stored.

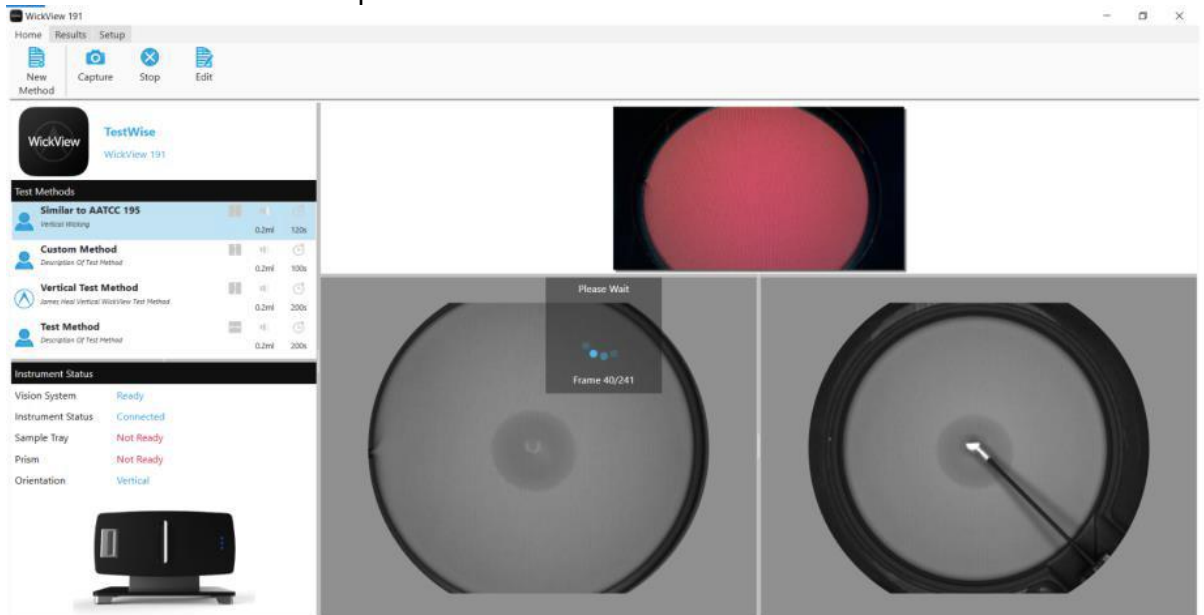
A photograph of the fabric can be imported or captured from the fabric in-situ at this point.

Additional test information can be added and changed, enabling a record of information to be stored on material specimen being tested. This information can be adjusted at a later stage.



- Once completed select 'Start Test'.

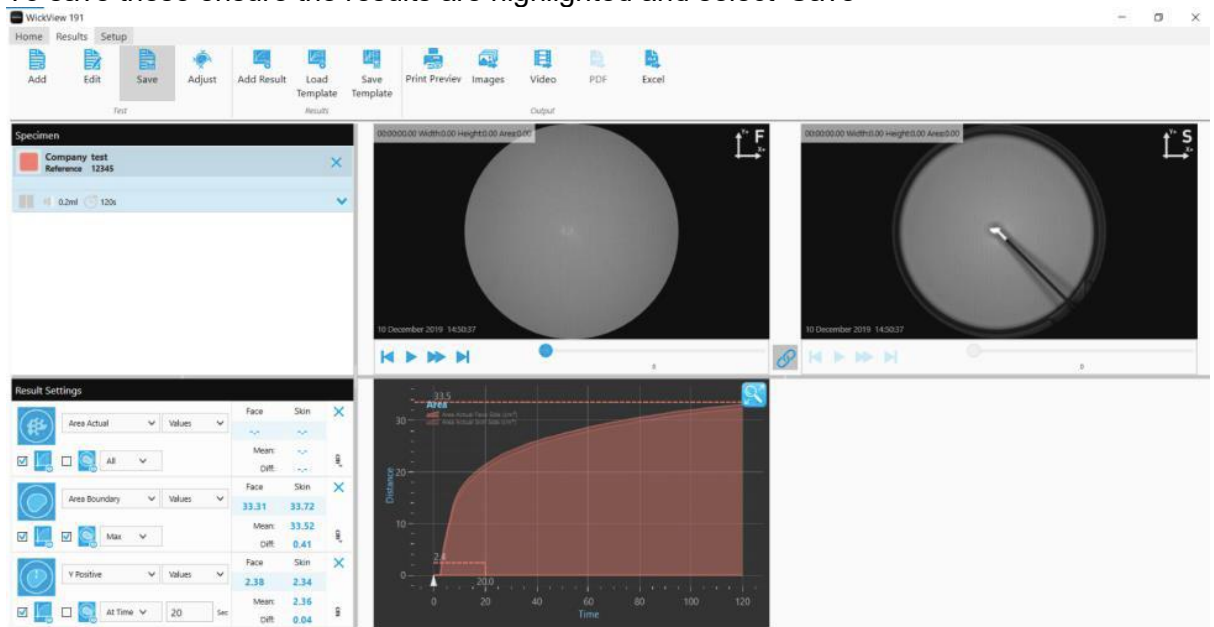
The test will begin and the screen will look like this, showing the live frames being recorded as the test is completed.



- When the test is completed select the Results page.

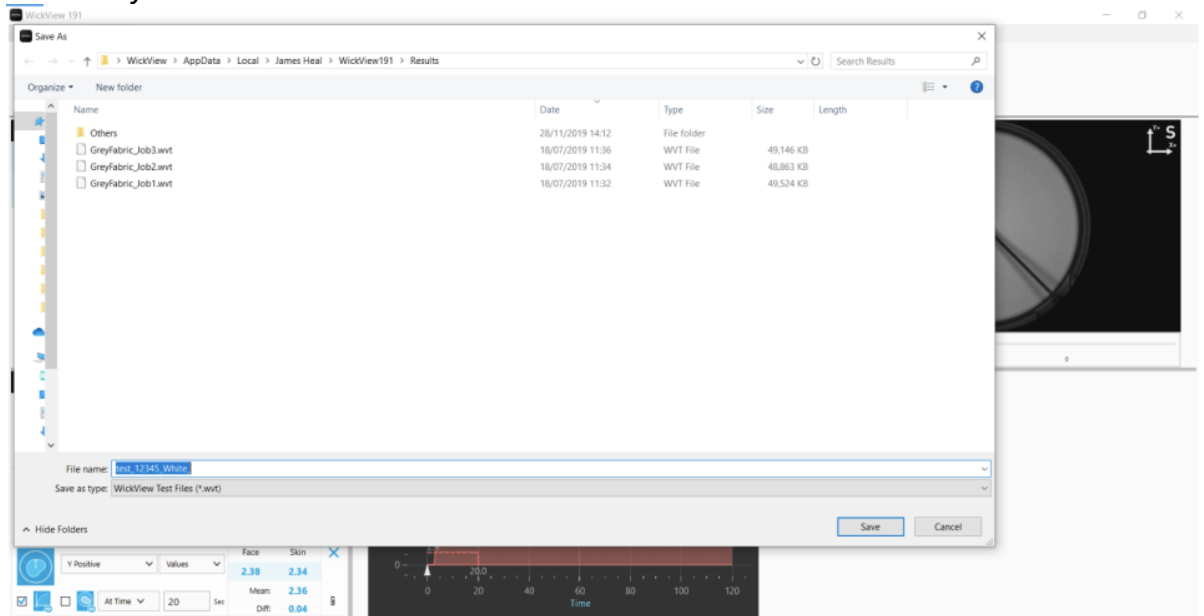
The specimen result data is held & highlighted blue in the 'Specimen' box.

To save these ensure the results are highlighted and select 'Save'



5. Select where you want them saving & select 'Save'

Note: Only one test can be saved at a time.



6. Once saved, you will be returned to the Results screen.

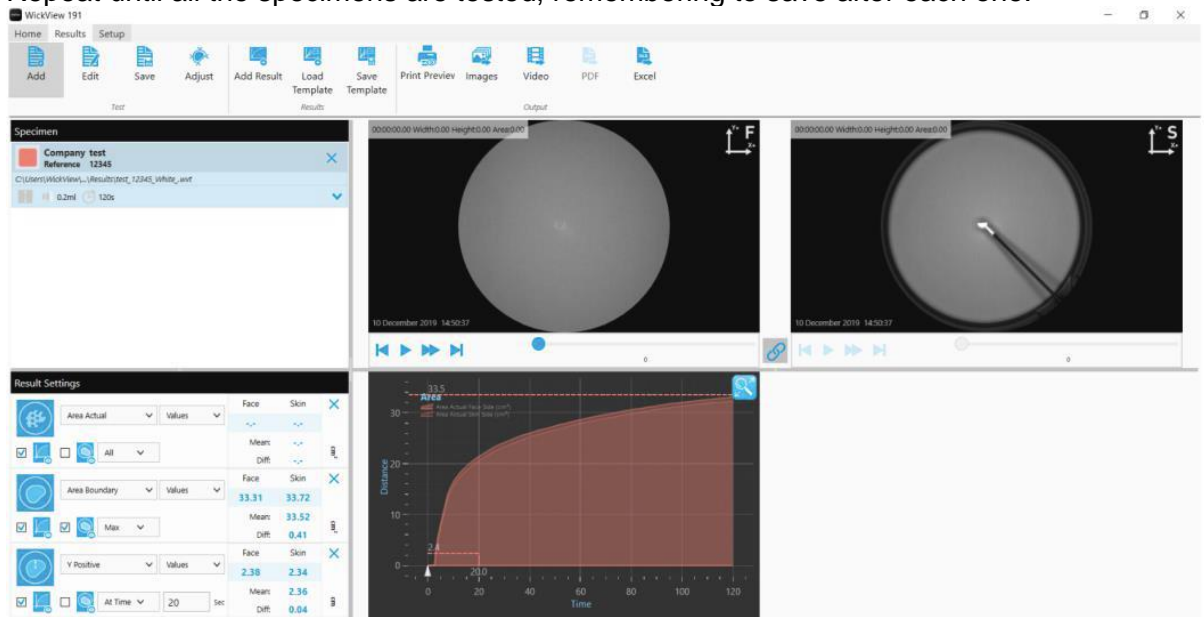
To conduct another test, select the Home screen, double click the test method you want or create a new one.

(After each test, it is advised to insert the priming cassette into WickView & take it out again straight away. This will ensure that any loose water is collected on the priming cassette & not on the sample to be tested).

Insert the new test specimen into the testing cassette.

Complete the Test Information box with the next specimen information and then 'Start Test' again.

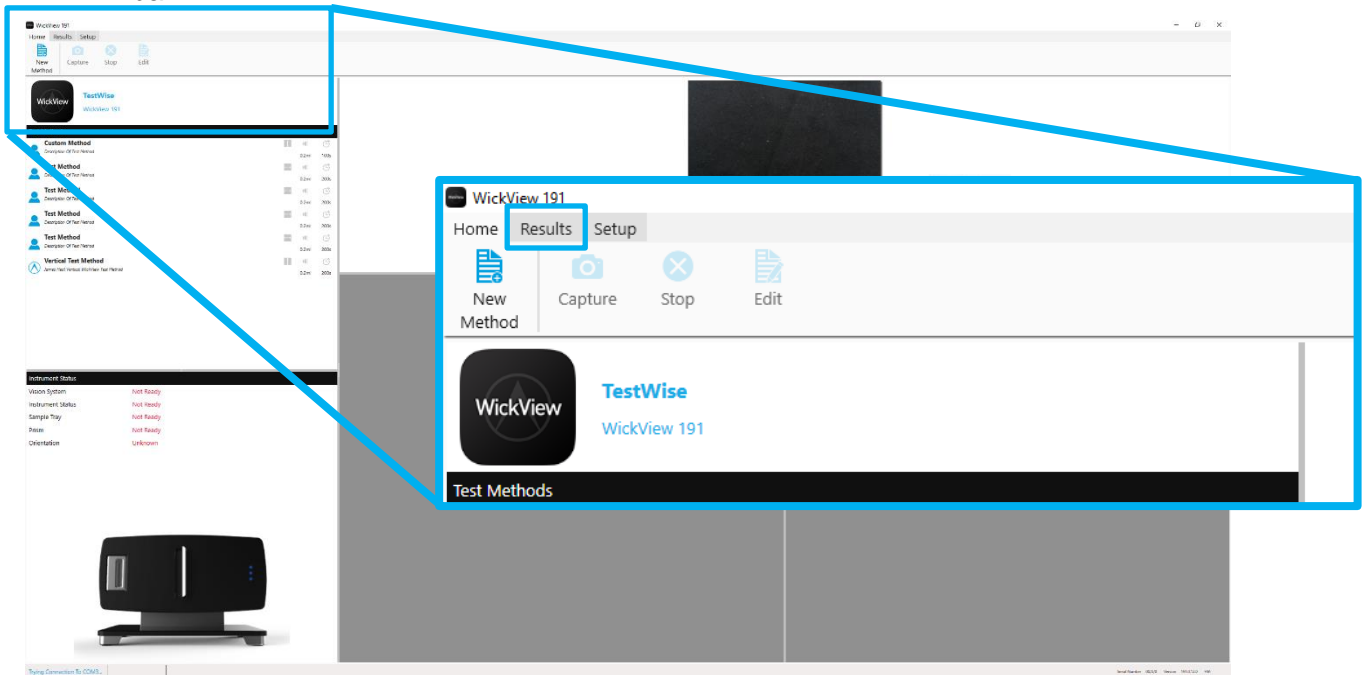
Repeat until all the specimens are tested, remembering to save after each one.



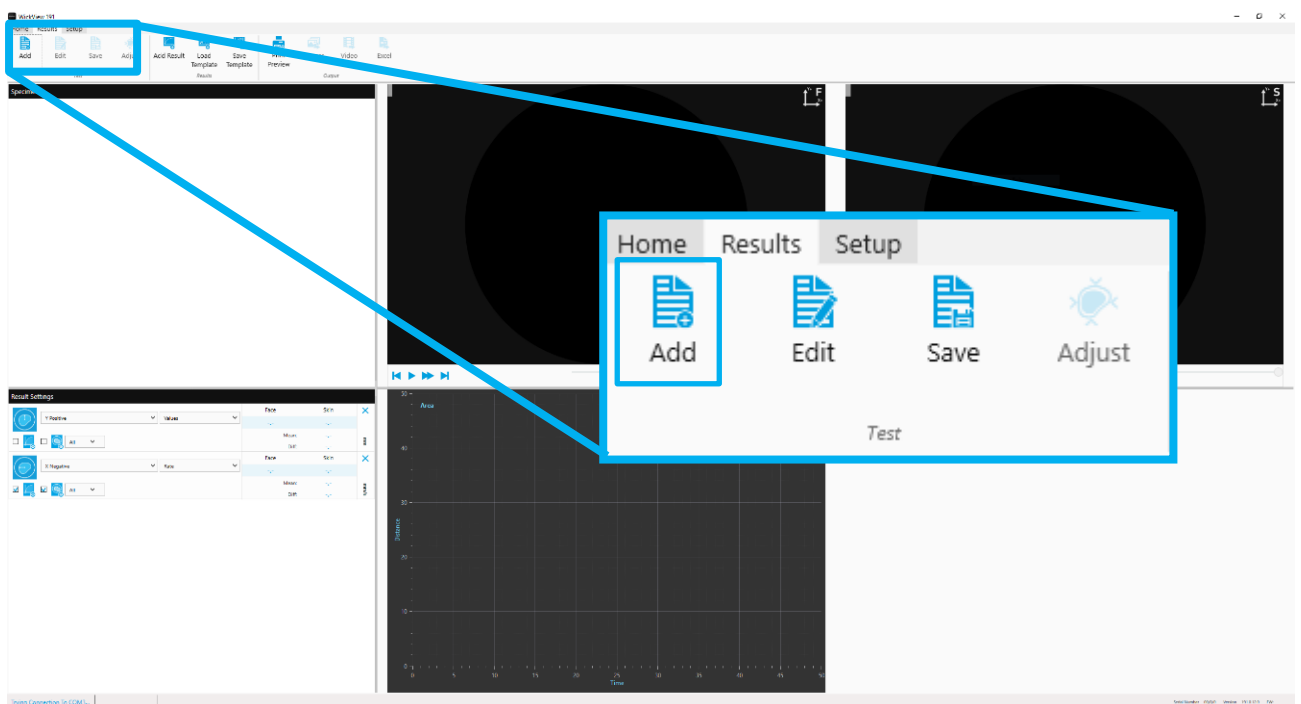
TESTWISE & RESULTS ANALYSIS

Importing specimen test data & data set up tips.

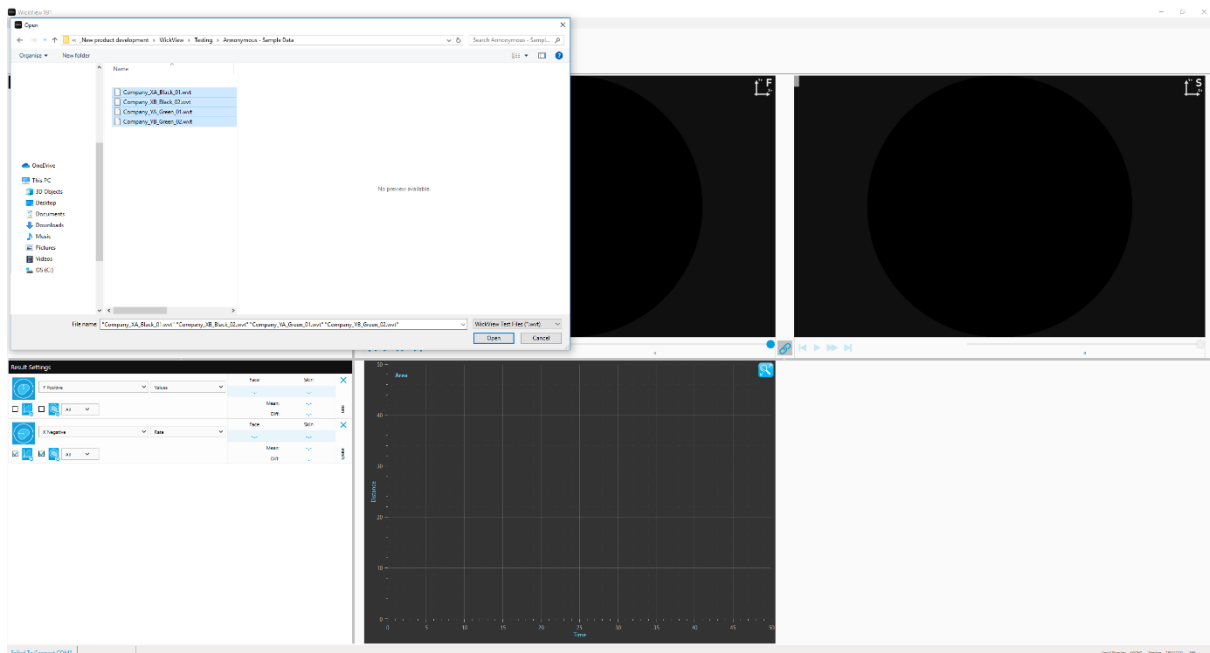
1. Once you have completed a number of tests, you may want to compare these results. The results you want to compare may have been recorded prior to evaluation and no longer remain in the specimen menu. Any unsaved results will not be saved when TestWise is closed. If you are starting the WickView TestWise application for evaluation you will start on the Home page, select the Results tab on the navigation bar.



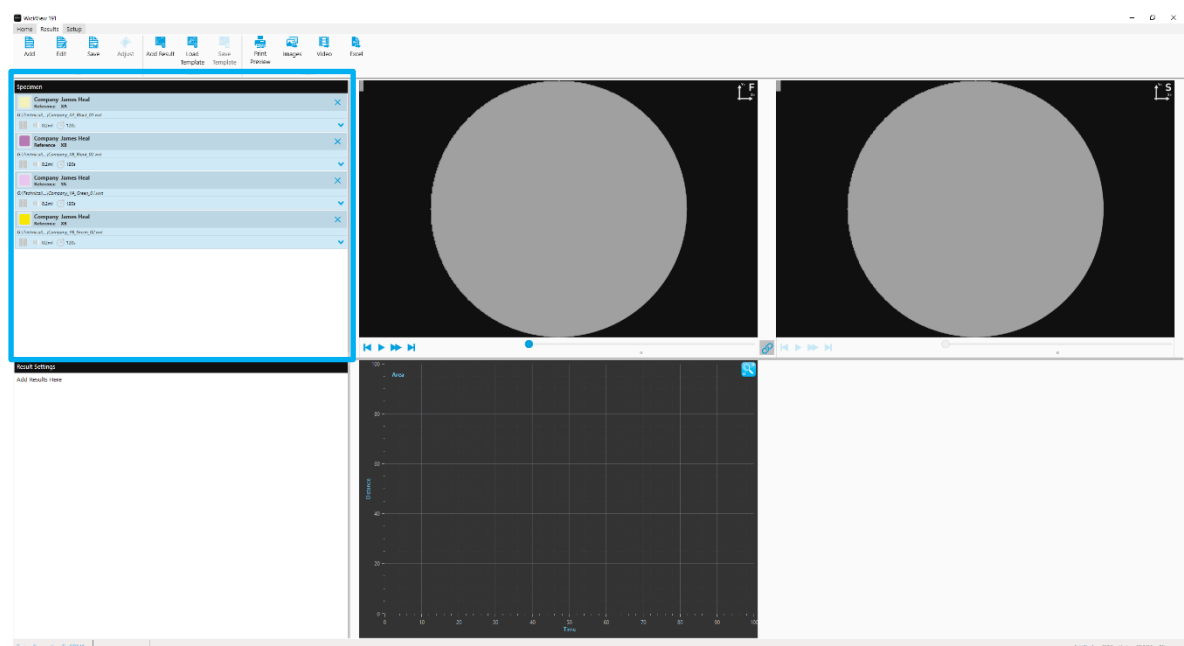
2. Once on the Results screen you can add saved test data to compare results.



3. Select the Add button, this will open the file navigator. Highlight the test result files you want to compare and open select open.



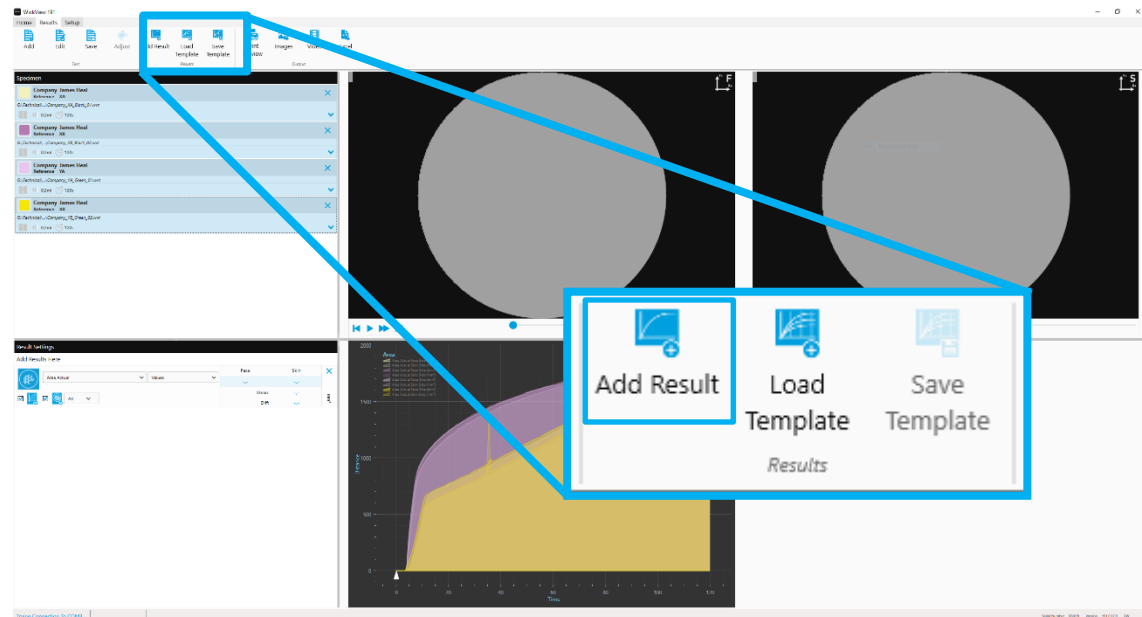
4. Once the test results have been loaded into WickView you can now begin to evaluate the results. By selecting Add Result which can be found in the results section of the navigation bar. This action will add a result evaluation parameter to the results settings menu on the left hand side of the screen.



Note: Depending on the size of the files this may take a few minutes to load the files into TestWise for WickView.

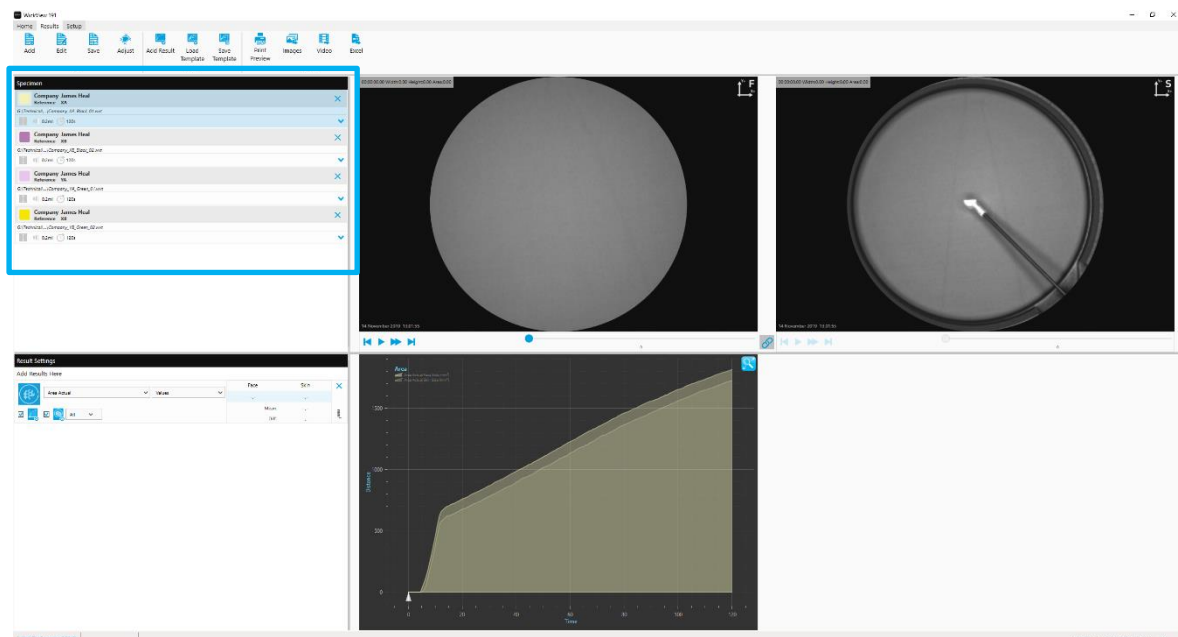
Tip: To delete any unwanted test results, highlight the test you want to delete and select the cross 'x' and confirm the deletion request when asked. When selected the results will be highlighted blue.

5. Once you have imported your test results you will be able to compare these. You will need to first apply some result settings. Simply press 'Add Result' in the results menu.



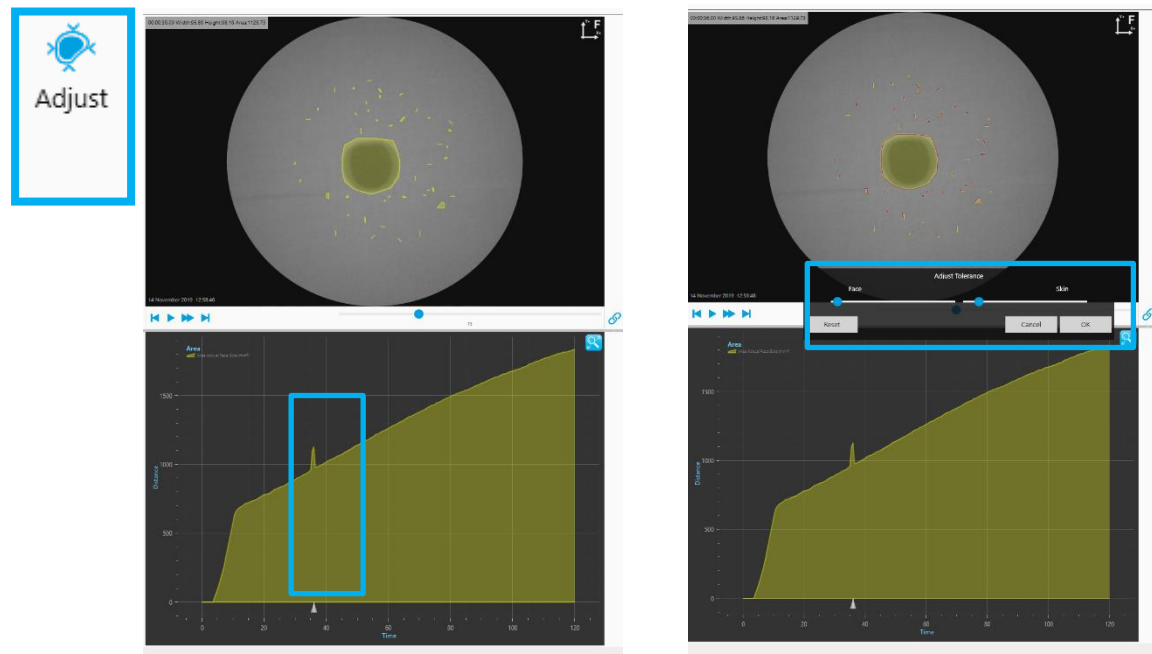
This will then allow you to view and compare the test result data recorded.

6. To control which specimen test results you are comparing:
 - a. Right clicking an individual test result, to evaluate an individual result.
 - b. Holding the control button (Ctrl) down on your key board and right clicking various results to compare results not in sequence.
 - c. To select a sequence of results right click the first result and hold the shift keyboard button down and right click the last result you would like to compare, this will highlight these results for comparison.

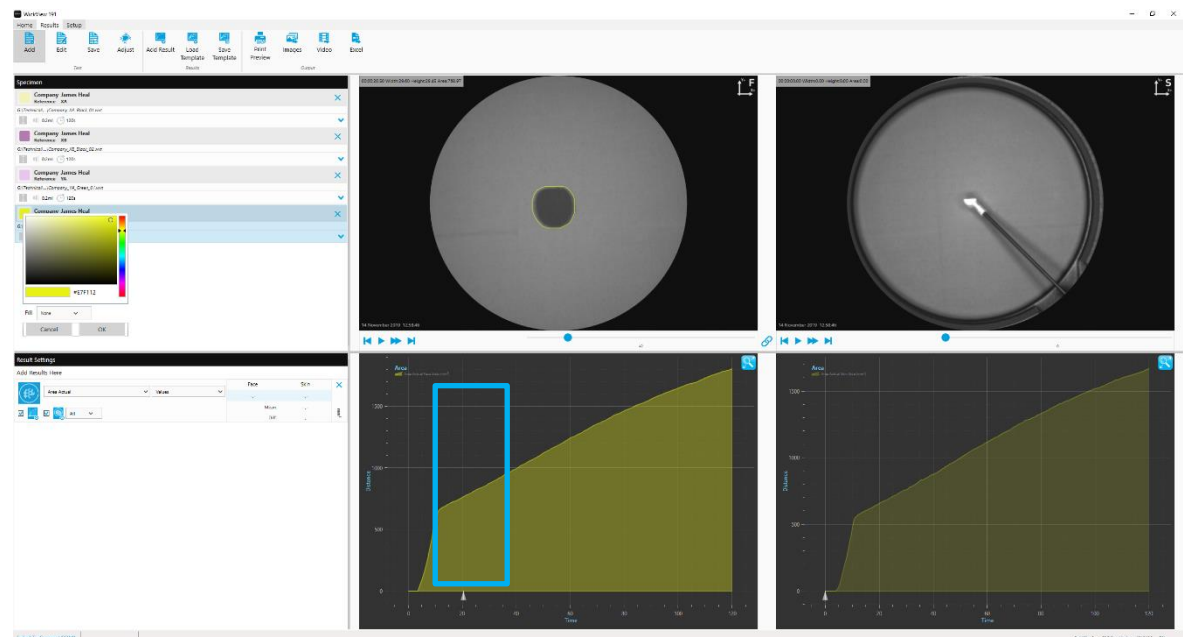


Note: A blue highlight indicates the test result is selected.

- If you notice any anomalies in how TestWise has interpreted the data recorded you may see spikes on your area graph.

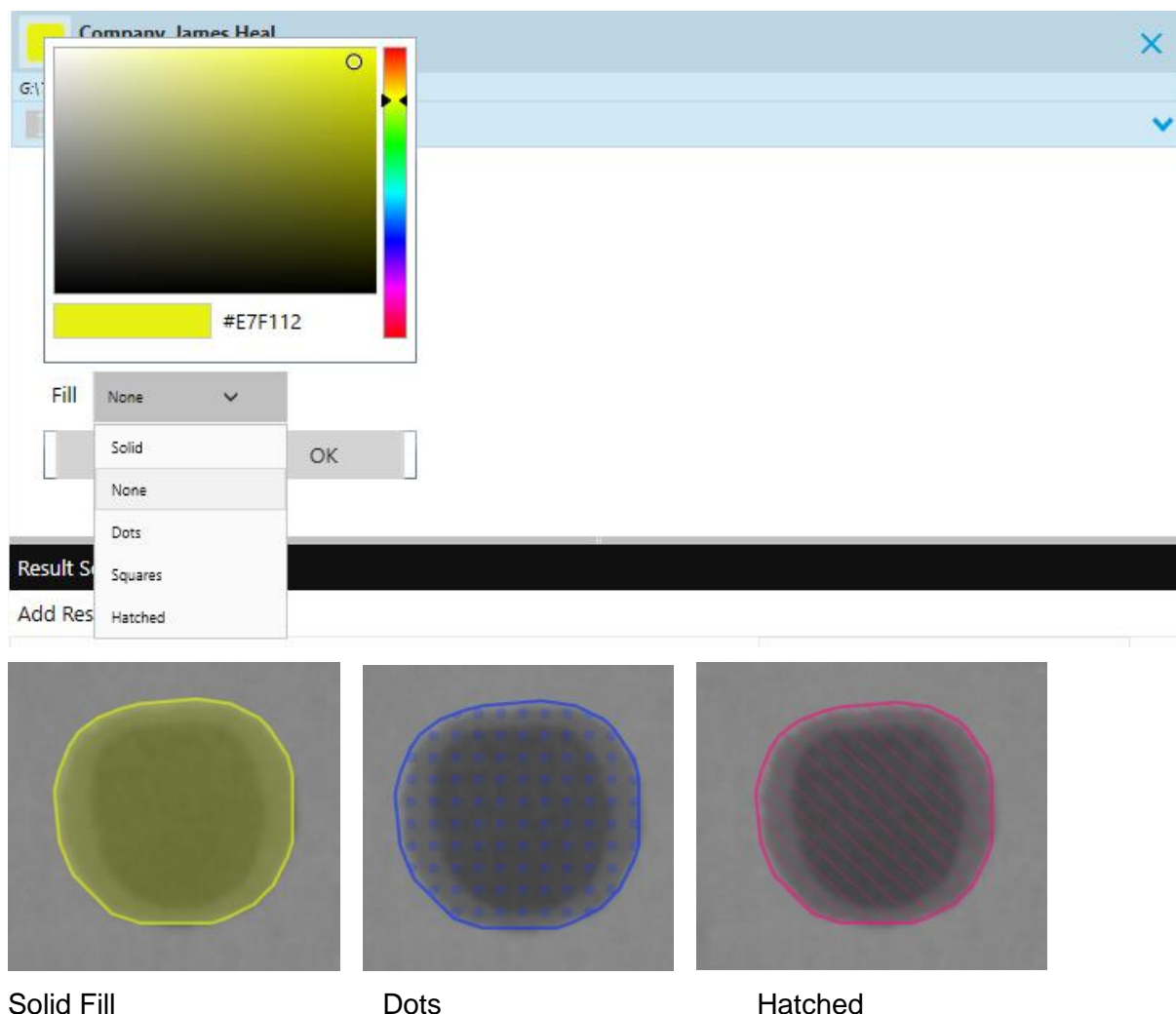


Select the adjust button on the tool bar, this will allow you to fine tune the area selection & smooth the curve by removing the spike/spikes.

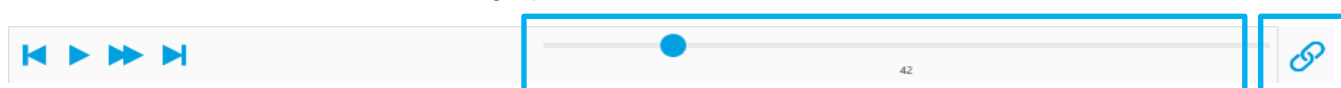


8. When comparing the results if it is difficult differentiate between different data sets you can change the colour assigned to the specimen. You can do this by clicking on the colour swatch and then using the colour pallet select a new colour that will allow you to more easily differentiate the results.

You can also change the fill area type in the live window, from the default solid fill to dots, squares, hatches or just an area outline.



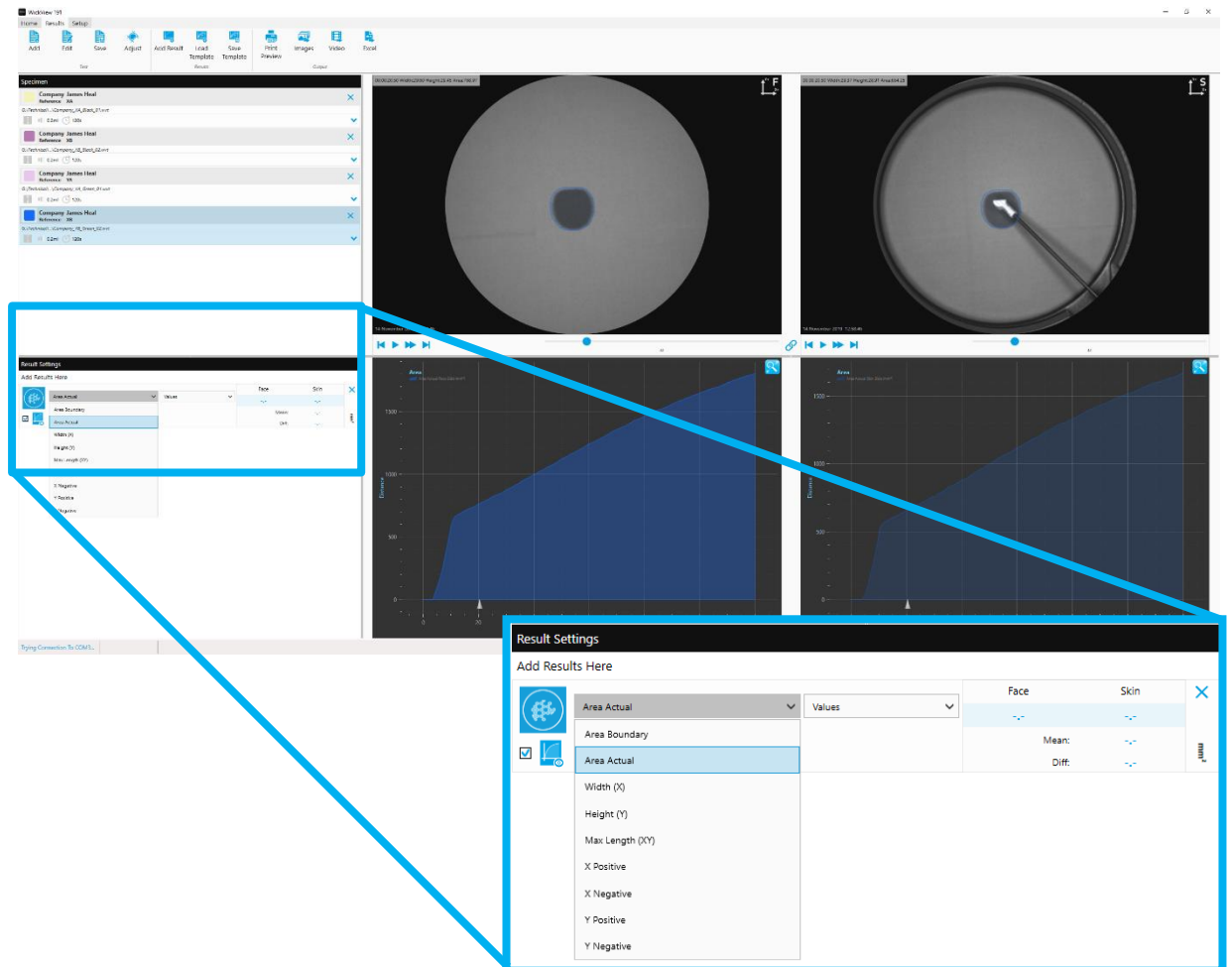
Note: If you can't see any image results in the specimen viewer, press the play button or scroll through using the navigation slider. The link icon if selected will place both the skin and face side of the fabric onto the same graph.



Use navigation slider as seen above to navigate along the frames captured during the test.

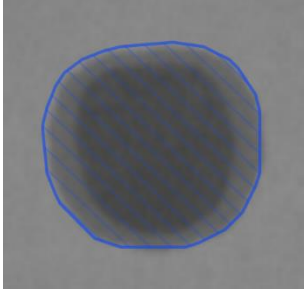
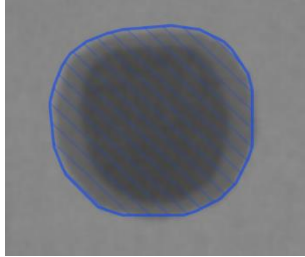
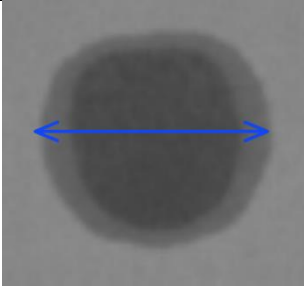
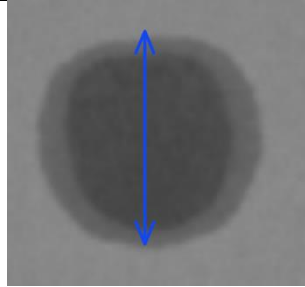
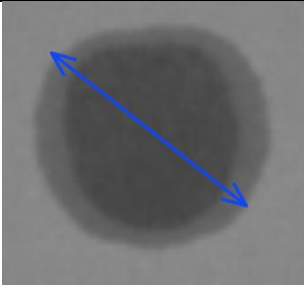
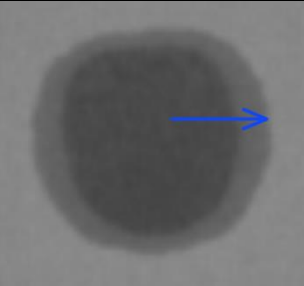
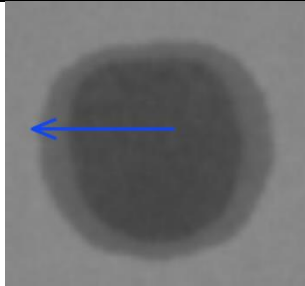
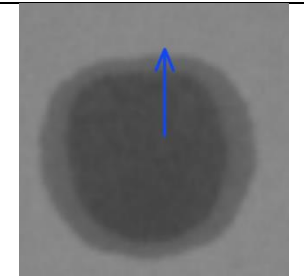
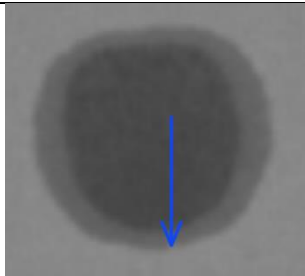
Result Settings and Evaluation

1. There are a number of different metrics that can be identified by the TestWise Software shown in the drop-down tab. A visual representation of the data sampled can be seen in the specimen window as well as the icon in the results settings panel.

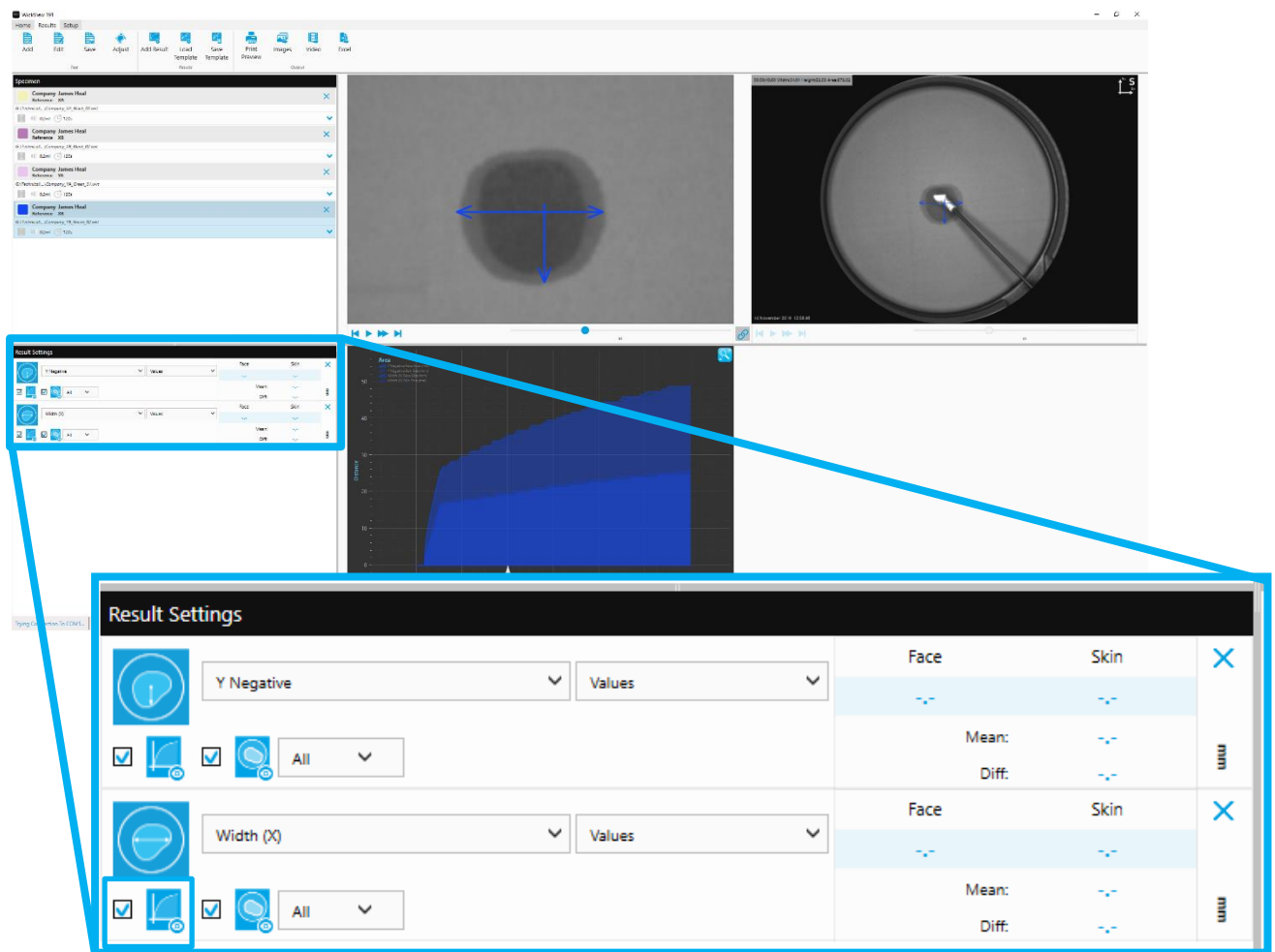


Tip: Depending on how the water reacts to your material specimen you may be able to tailor your result metrics to more easily analyse the test findings. An example of this could be if you have a fish eye fabric, the wicking would travel around the holes in the fabric leaving obvious un-wet areas where there is no fabric. The Area Actual will show the individual wetted and un-wetted areas.

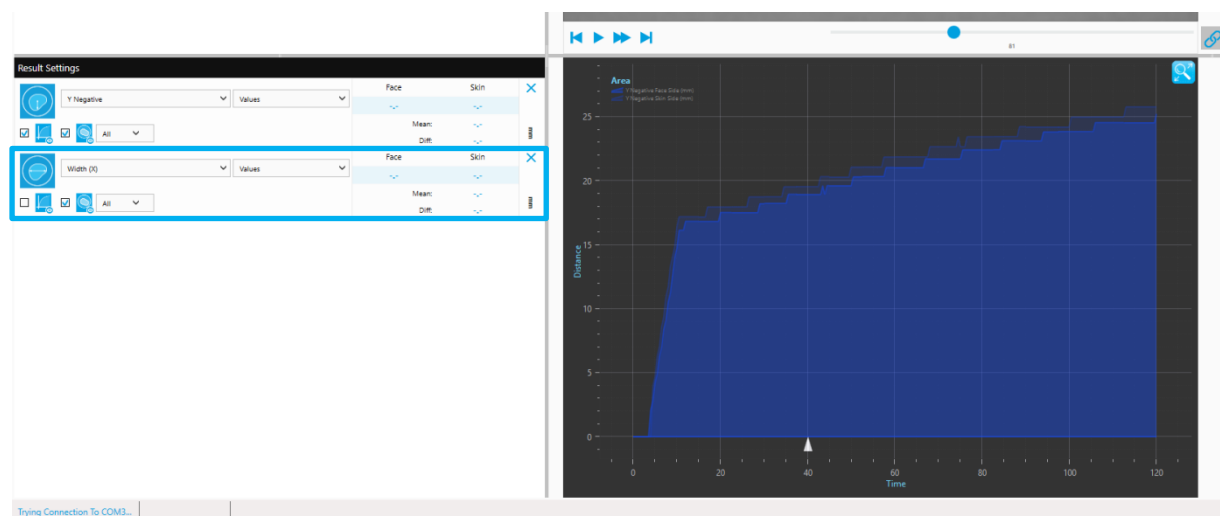
Specimen Metrics Table

Description	Representation		Description	Representation	
Area Boundary			Area Actual		
Width (X)			Height (Y)		
Max Length (XY)					
X Positive			X Negative		
Y Positive			Y Negative		

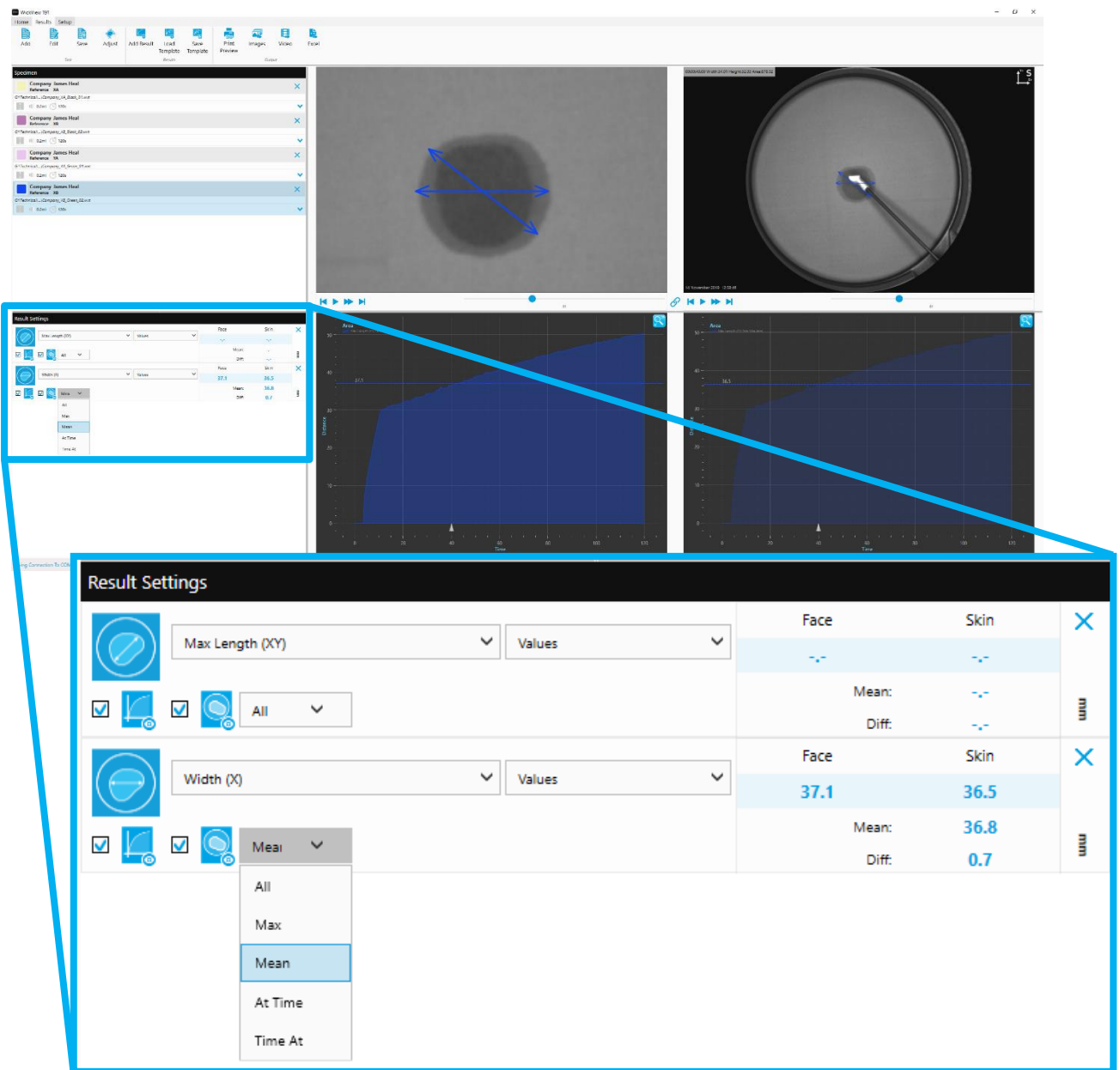
- Multiple result evaluation settings can be applied, by simply selecting add result on the results tab. If you do this, multiple results can be seen in the graph representation area. To hide the different results from the graph to reduce confusion press the graph visibility tick box.



This will remove the other data set from the graph, it can be simply toggled on and off depending on what results you would like to be visible on the graph. You can view and compare as many or as few results on the graph as you wish.



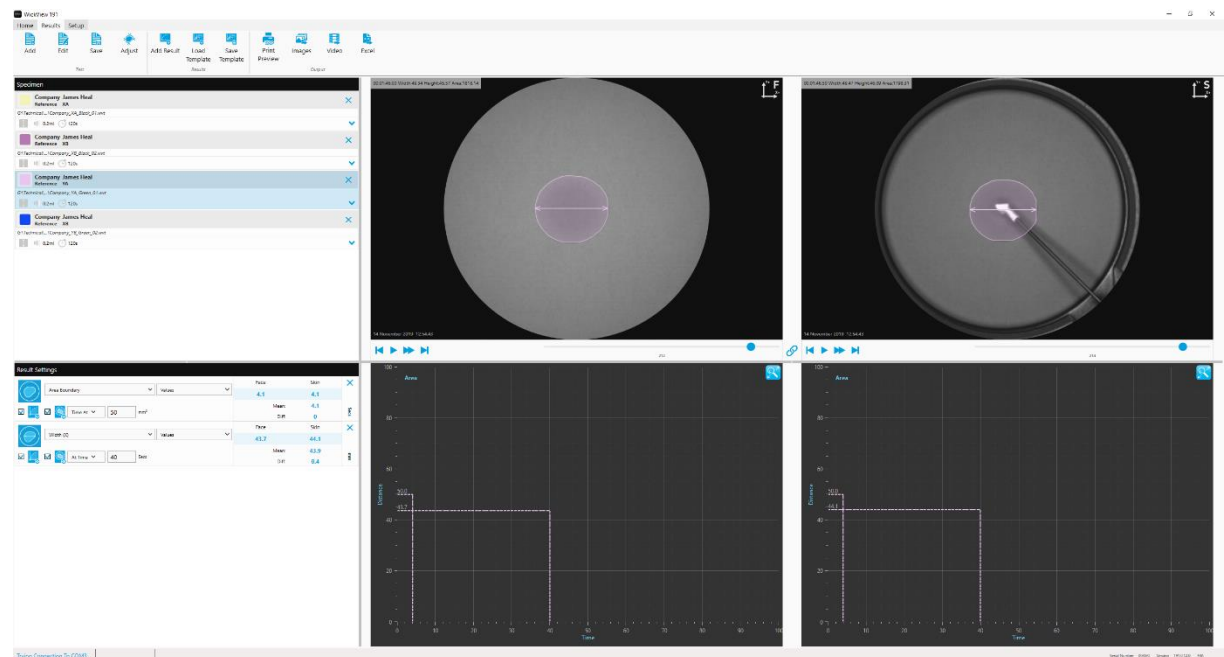
- The drop-down menu located next to the graph visibility icon will change the results presented on the graph.



These representations show in the graph area 'All' the results collected, mean or max of the data. You can also identify a result at a specific time or volume. By selecting 'At Time' (Time) or (Volume) 'Time At', making it easy to compare specific features between fabric specimens.

If 'All' is checked the graph shows the wicking in distance travelled in millimetres (dependent on units specified on setup) over the specified test time (in this case 120 seconds of which 2 frames are taken per second providing 240 data samples).

- Defining both 'At Time' and 'Time At' can help identify results clearly at specific times and volumes.



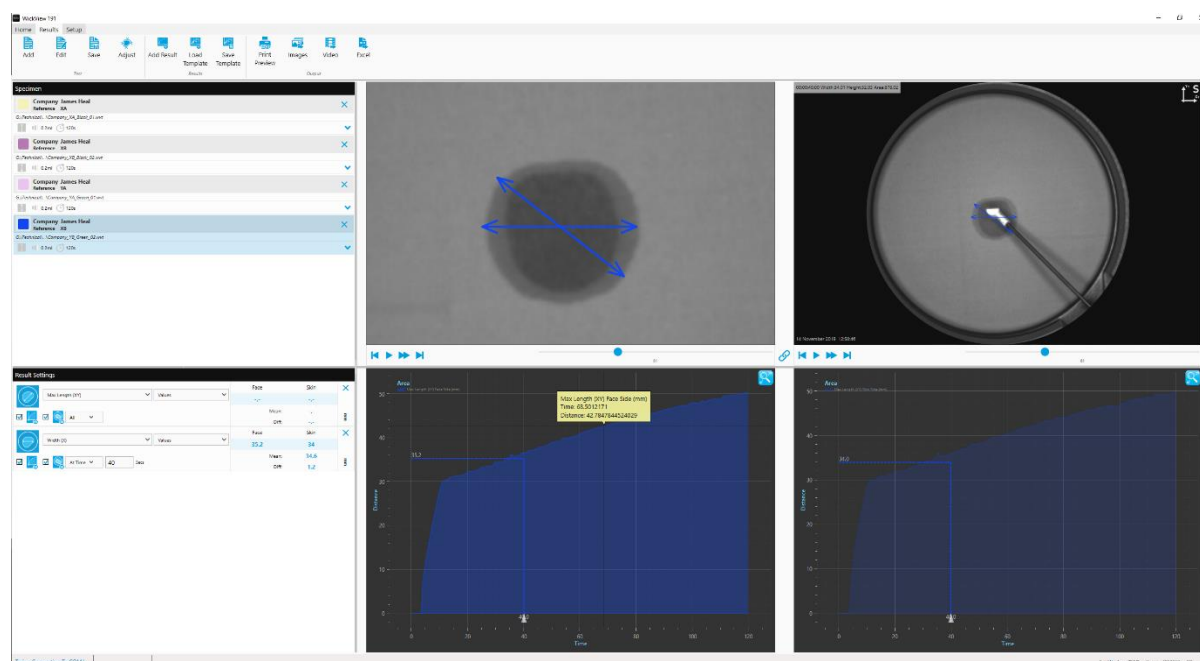
As shown above 'At Time' shows the mean value in $\text{mm}^2/\text{second}$ as the long lower line showing that in 40 seconds the liquid has wicked 43.7mm^2 .

Result Settings				
	Area Boundary	Values	Face	Skin
	Time At	50 mm^2	4.1	4.1
			Mean:	4.1
			Diff:	0
	Width (X)	Values	Face	Skin
	At Time	40 Secs	43.7	44.1
			Mean:	43.9
			Diff:	0.4

'Time At' shows the mean value in seconds on the graph as the higher line, this shows that it took 4.1 seconds to travel the user defined area boundary distance of 50mm^2 .

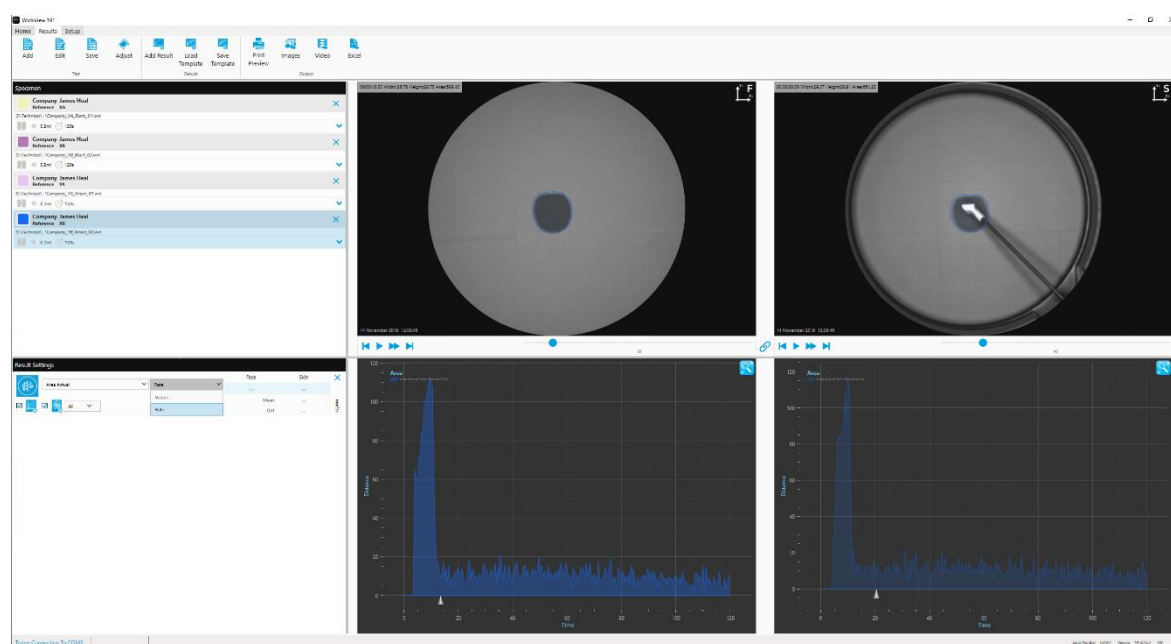
'Diff' when reviewing Max, Mean, At Time and Time At means the 'Difference' in wicking results between the Face and Skin side of the chosen measurement.

- To view the specific points on the graph, click and drag the cross hair to view the Max length (or any other specified data set) at a specific time.

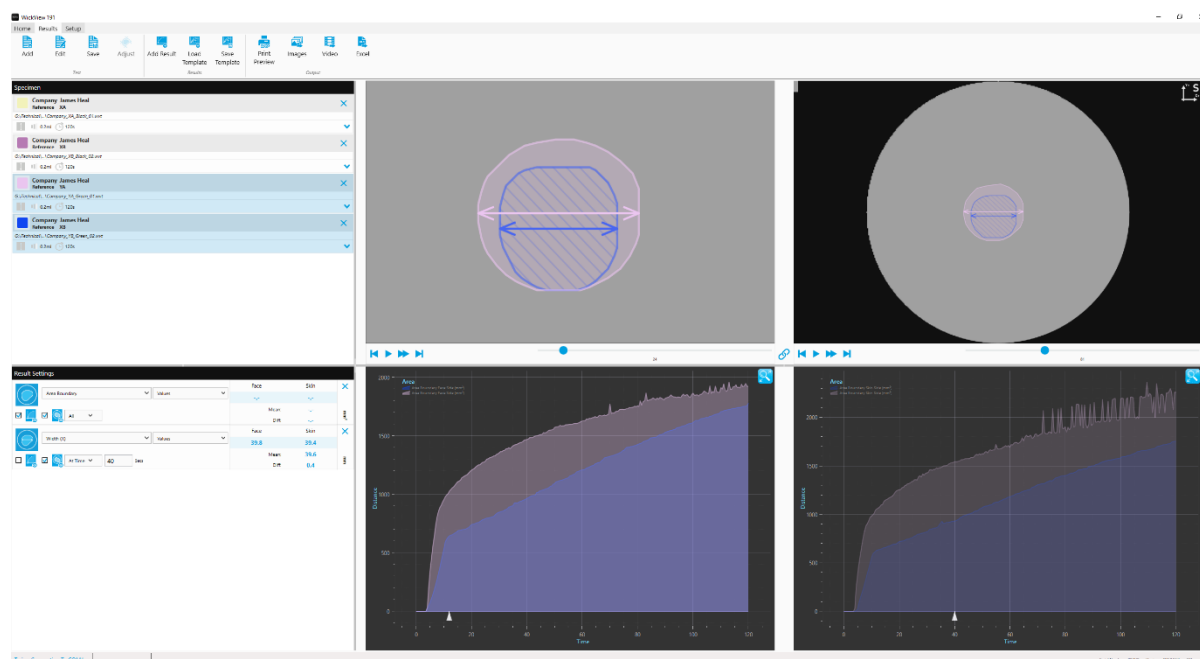


- To see how quickly water spreads in millimeters per second (in this case) change the units from Values to Rates using the drop-down tab.

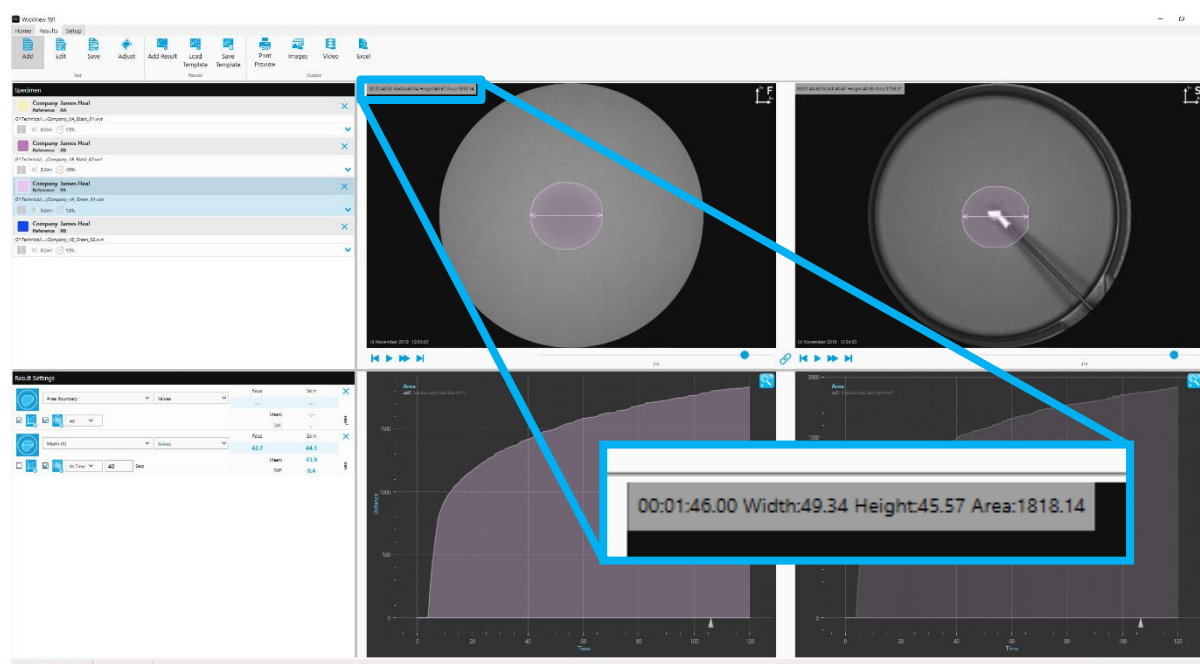
The graph will then show as depicted below. The liquid traveling quickly in the first few second and when slows over the duration of the test.



- You can play the footage recorded in the test back in real time, if you select one specimen to view you will be able to view the material in the specimen window. If you have more than one specimen selected you will only see the outline or specific metric (Max Length (XY), Area Boundary) as the results are played back.



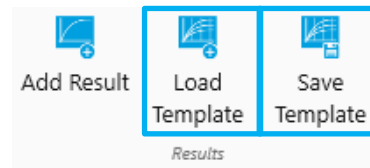
Two specimens selected.



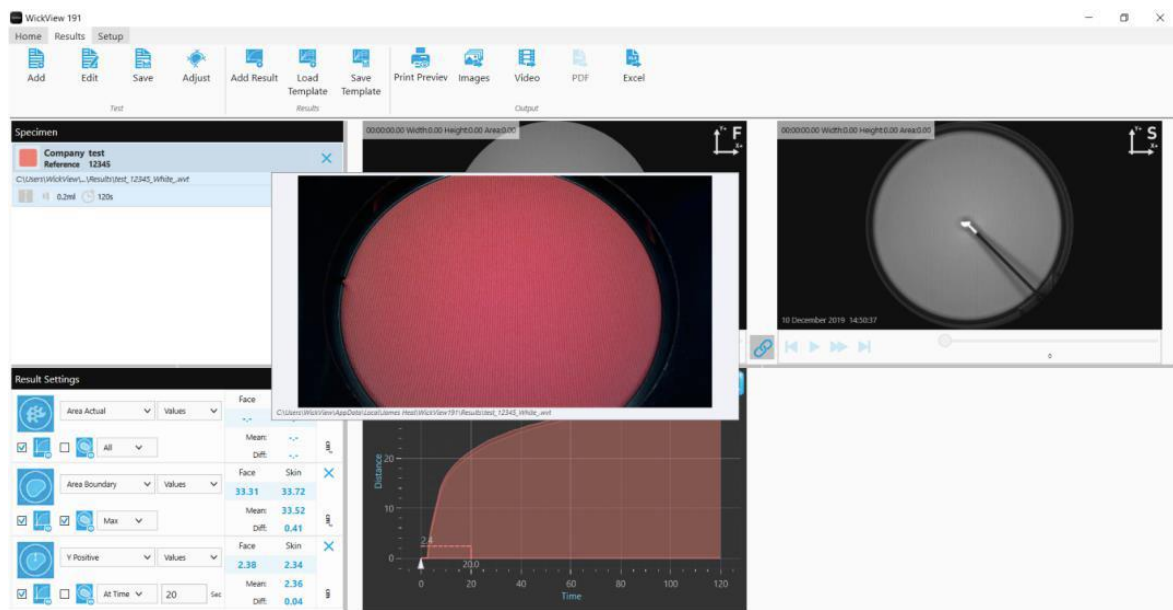
One specimen selected.

In the top left corner of the specimen viewing window, you can see the time, width, height and area throughout the test.

8. Once you have created a series of results settings you are happy with and would like you continue to evaluate specimens against these criteria, you can save the results settings using the 'Save Template' button found in the Results tab in the top menu. You can load this Results Settings 'Template' in the future by selecting Load Template.



9. To view the captured fabric image, hover the mouse pointer over the selected box and the image will appear until the mouse is moved.



Tip: You can zoom in on the specimen view by using hovering of the specimen area with your cursor and scrolling with your mouse wheel or laptop track pad. You can then navigate the zoomed image by holding the left mouse button and dragging. To re-set the specimen view simply press the right click.

JHTM-017 TEST METHOD

James Heal have created a test method with a defined set of measurement criteria that when used in the software can provide an 'Overall WickView Grade'

The test method & updated software are available from James Heal.

OUTLINE

0.2ml of water is dosed onto the skin side of the fabric, over the 2 minute test duration a number of data points are measured.

Wetting Time (Area Actual) - The time which moisture is detected on the Face side in seconds.

Absorption Rate (Area Boundary) - The percentage difference between skin & face areas at 120 seconds.

Max Wetted Diameter (Max Length XY) - The peak diameter of the wicked area recorded at any time during the test in millimetres.

Max Spreading Speed (Max Length XY) - The peak rate of change of diameter of the wicked area recorded at any time during the test in millimetres per second.

Spreading Length X (Width X Max) - The peak width of wetted area during the test in millimetres.

Spreading Length Y (Height Y Max) - The peak height of wetted area during the test in millimetres.

Spreading Speed X (Width X Max Rate) - The peak rate of change (speed) of width of wetted area during the test in millimetres per second.

Spreading Speed Y (Height Y Max Rate) - The peak rate of change (speed) of height of wetted area during the test in millimetres per second.

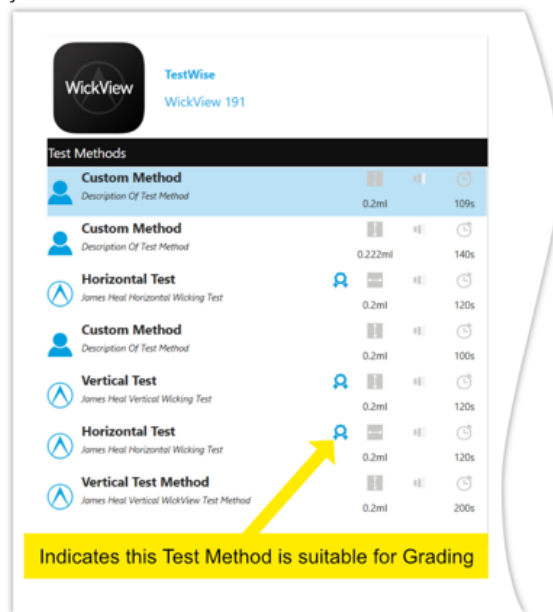
Wicking Area (Area Boundary) - The area boundary of wetted area at 120 seconds in millimetres squared.

Overall (Wicking Grade) - The total number of calculated grades (with full precision) divided by the number of data points (16).

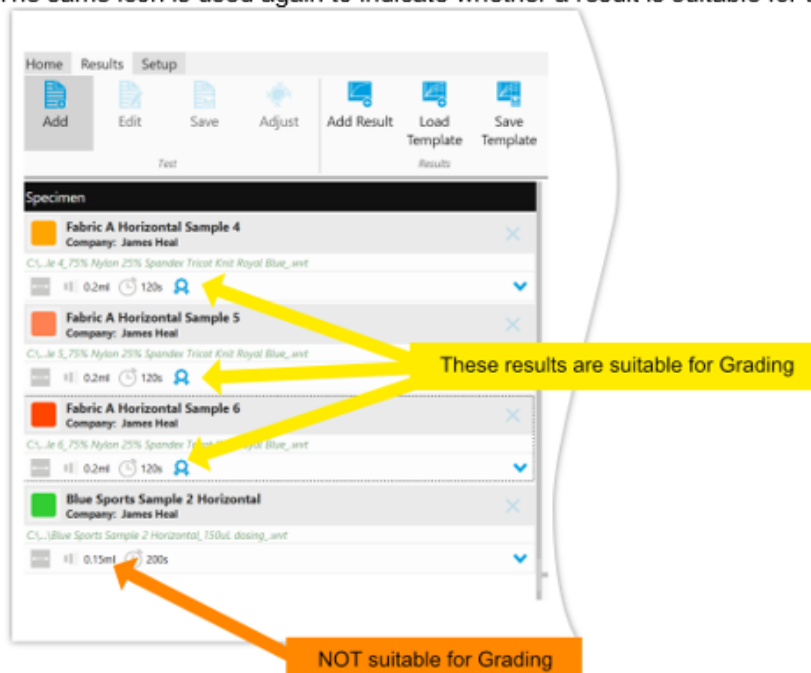
Test Methods

In the Test Methods section, the WickView Standard Icon is shown at the side of each test that meet the criteria documented in the JHTM-017 test method (see example below):

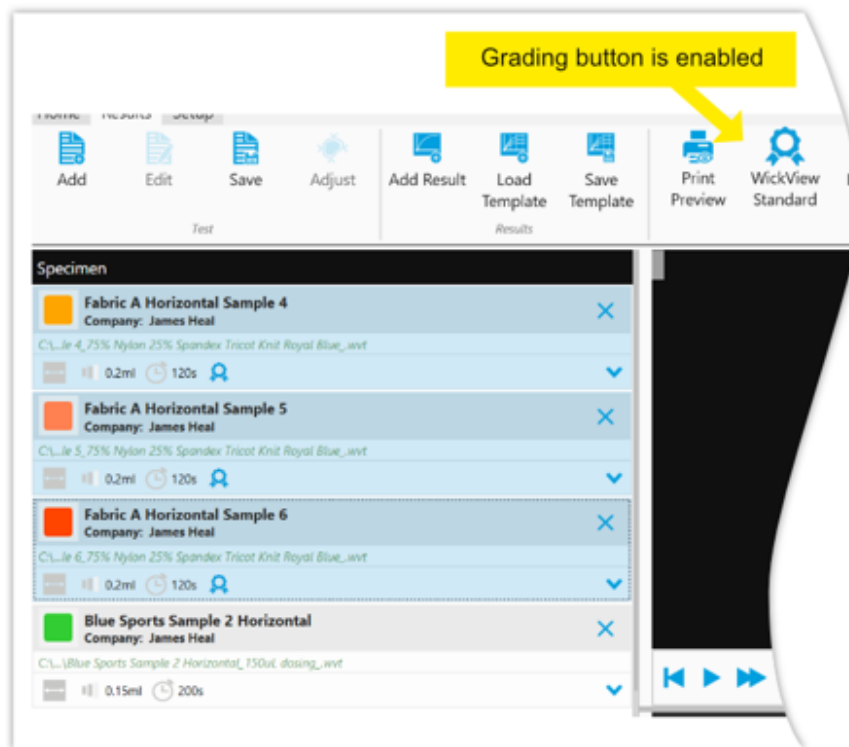
The WickView grading icon is used to indicate where a **Test Method** is suitable for the grading system:



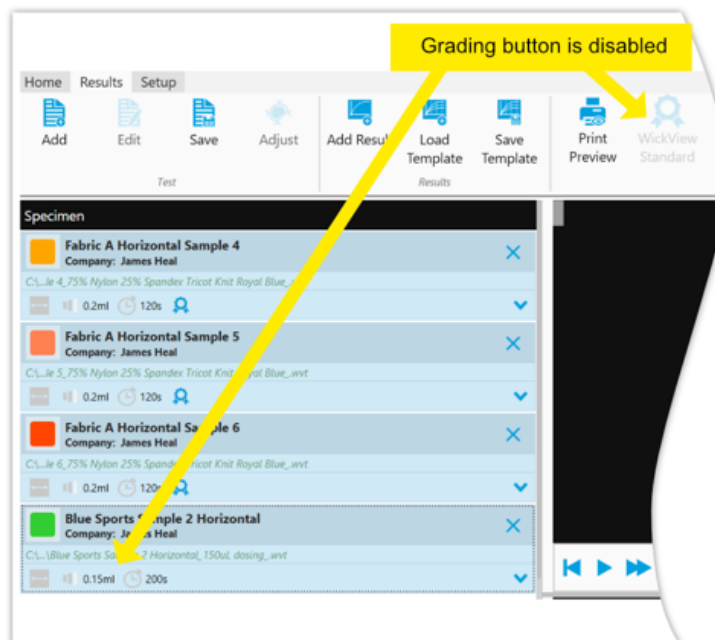
The same icon is used again to indicate whether a result is suitable for the grading system:



If every one of the selected results meet the criteria then the grading button will be **enabled**:



However, if any of the selected results do *not* meet the criteria then the grading button will be **disabled**:



OVERALL WICKING GRADE

Once the testing is complete, select the WickView Standard Icon on the top tool bar, the software will calculate the data & display an Overall WickView Grade:

WickView Grading (JHTM 17)

Print

Grade												
Description	Side	Unit	1	2	3	4	5	6	7	8	9	10
Wetting Time	Face	Secs									1.5	
Absorption Rate	Face	Diff%								97.3		
Max Wetted Diameter	Face	mm									63.0	
Max Wetted Diameter	Skin	mm									64.1	
Max Spreading Speed	Face	mm/s							14.1			
Max Spreading Speed	Skin	mm/s							16.7			
Spreading Length X	Face	mm									58.5	
Spreading Length X	Skin	mm									58.9	
Spreading Length Y	Face	mm									59.1	
Spreading Length Y	Skin	mm									60.7	
Spreading Speed X	Face	mm/s					12.6					
Spreading Speed X	Skin	mm/s						14.4				
Spreading Speed Y	Face	mm/s				9.7						
Spreading Speed Y	Skin	mm/s					12.7					
Wicking Area	Face	mm ²								2743.3		
Wicking Area	Skin	mm ²								2818.1		
Overall WickView Grade									7.89			

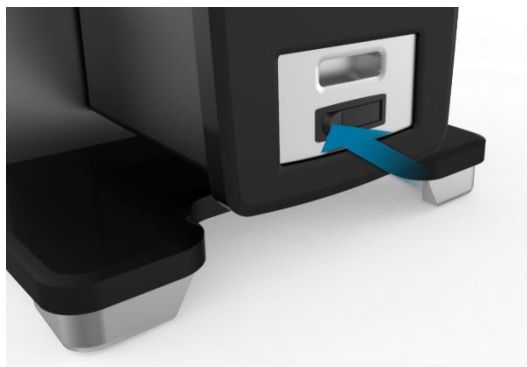
The software includes a table showing how each data point is weighted:

Grading Range	Side	Unit	1	2	3	4	5	6	7	8	9	10
Wetting Time	Face	Secs	>=40.1	<40.1	<35.2	<30.4	<25.5	<20.6	<15.7	<10.9	<6.0	<=1.1
Absorption Rate	Face	Diff%	<=30.0	<41.1	<52.2	<63.3	<74.4	<85.6	<96.7	<107.8	<118.9	>=118.9
Max Wetted Diameter	Face	mm	<=0.3	<9.1	<18.0	<26.8	<35.7	<44.6	<53.4	<62.3	<71.1	>=71.1
Max Wetted Diameter	Skin	mm	<=0.3	<9.1	<18.0	<26.8	<35.7	<44.6	<53.4	<62.3	<71.1	>=71.1
Max Spreading Speed	Face	mm/s	<=0.3	<3.0	<5.8	<8.5	<11.3	<14.0	<16.8	<19.5	<22.3	>=22.3
Max Spreading Speed	Skin	mm/s	<=0.3	<3.0	<5.8	<8.5	<11.3	<14.0	<16.8	<19.5	<22.3	>=22.3
Spreading Length X	Face	mm	<=5.0	<12.2	<19.4	<26.7	<33.9	<41.1	<48.3	<55.6	<62.8	>=62.8
Spreading Length X	Skin	mm	<=5.0	<12.2	<19.4	<26.7	<33.9	<41.1	<48.3	<55.6	<62.8	>=62.8
Spreading Length Y	Face	mm	<=5.0	<12.2	<19.4	<26.7	<33.9	<41.1	<48.3	<55.6	<62.8	>=62.8
Spreading Length Y	Skin	mm	<=5.0	<12.2	<19.4	<26.7	<33.9	<41.1	<48.3	<55.6	<62.8	>=62.8
Spreading Speed X	Face	mm/s	<=5.0	<7.2	<9.4	<11.7	<13.9	<16.1	<18.3	<20.6	<22.8	>=22.8
Spreading Speed X	Skin	mm/s	<=5.0	<7.2	<9.4	<11.7	<13.9	<16.1	<18.3	<20.6	<22.8	>=22.8
Spreading Speed Y	Face	mm/s	<=5.0	<7.2	<9.4	<11.7	<13.9	<16.1	<18.3	<20.6	<22.8	>=22.8
Spreading Speed Y	Skin	mm/s	<=5.0	<7.2	<9.4	<11.7	<13.9	<16.1	<18.3	<20.6	<22.8	>=22.8
Wicking Area	Face	mm ²	<=10.0	<453.3	<896.7	<1340.0	<1783.3	<2226.7	<2670.0	<3113.3	<3556.7	>=3556.7
Wicking Area	Skin	mm ²	<=10.0	<453.3	<896.7	<1340.0	<1783.3	<2226.7	<2670.0	<3113.3	<3556.7	>=3556.7

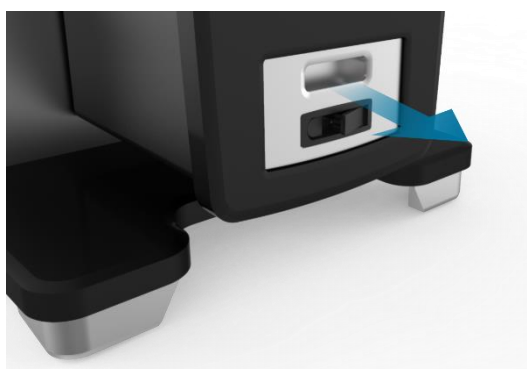
CLEANING AND MAINTENANCE

Cleaning the Prism

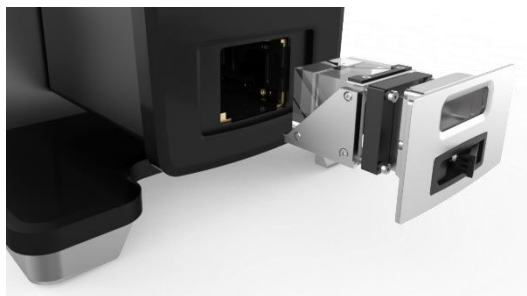
Press the release lock button, the lock will retract and release.



Using the handle, pull the prism housing from the body of the WickView test chamber.



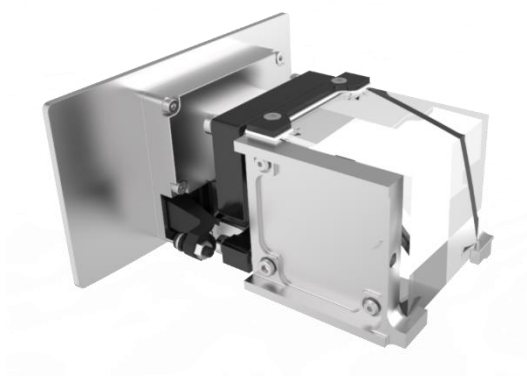
Avoid touching the optic with your fingers. When handling or cleaning the lens, always wear powder-free gloves or finger cots.



Remove dust or loosely held particles by blowing them off the surface using a dust-free blower or camel hair lens brush.

Use lens cleaning solution and a microfiber cloth or lens tissue to remove grease. Use a circular motion moving from the centre of the prism surface to the outer edges.

Once complete return to the WickView test chamber.



FAULT FINDING

Fault	Probable Cause	Action
The equipment does not power on.	No power supply to equipment.	Check if plug is connected. Check if power is switched on.
Blurred image in TestWise for WickView results.	Water on prism	Remove the prism from the main body of WickView, wipe with cleaning solution & a soft cloth. Use lens cleaning solution and a microfiber cloth or lens tissue to remove grease. Use a circular motion moving from the centre of the prism surface to the outer edges. Ensure the prism is dry before inserting it back into WickView.

Warning

If the above action does not resolve the problem or the problem is not listed, switch off the unit and call a qualified technician for assistance.

Spares

Part Spares	Quantity Provided	Stock code
Pyrex Centrifuge Tube (with lid) 122 x 29 mm	1	716-827
Mains Lead Straight (US, EURO, UK)	1	142-304
Sample Cassette (1mm)	1	574-005
5mm A/F (M6) Metric Ball Point Screwdriver	1	381-119
Priming Cassette	1	574-205

JAMES HEAL SERVICE & CALIBRATION

James Heal Service & Calibration is a totally comprehensive, worldwide support programme.

When you buy instrumentation from us, it is the beginning rather than the end of an association.

Our aim is simple:

To provide precisely the services you need to maintain and protect the value of your investment.

For any enquires you may have regarding your instrument please contact James Heal Service & Calibration by e-mail, phone or fax.

In all communications, please quote the serial number of your instrument and the software version number, for example: 1440/15/1001 and V1.00.

James Heal Service & Calibration contact details:

E-mail support@james-heal.co.uk

Telephone +44 (0) 1422 366355

Fax +44 (0) 1422 352440

SOFTWARE

Please contact your installer or agent regarding software updates/issues.

EU Conformity

- Low Voltage Directive (LVD) 2014/35/EU
- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Waste Electrical and Electronic Equipment recycling (WEEE) Directive 2012/19/EU
- Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU

EU Declaration of Conformity



EU DECLARATION of CONFORMITY

This declaration is issued under the sole responsibility of the manufacturer.

We **James Heal**
of **Richmond Works, Halifax, HX3 6EP, UK**

in accordance to the following directive(s):

2014/35/EU	The Low Voltage Directive
2014/30/EU	The Electromagnetic Compatibility Directive

hereby declare that:

Equipment:	WickView
Models:	1932 Series
Description:	Moisture Management Tester
Serial Numbers:	1932/20/1000 & subsequent

is in conformity with the relevant Union harmonisation legislation, based on the conformity of the following documents:

Applied Harmonised Standards:

<i>Ref. No</i>	<i>Title</i>	<i>Edition/date</i>
EN 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements	2010+A1:2019
EN 61326-1	Electromagnetic Compatibility (EMC) equipment for measurement, control and laboratory use.	2013

EN 61326-1 Referenced Standards:

<i>Ref. No</i>	<i>Title</i>	<i>Edition/date</i>
EN 55011	Conducted & radiated emissions	2016+A11:2020
EN 61000-3-2	Harmonic emissions Class A	2019
EN 61000-3-3	Flicker	2013+A1:2019
EN 61000-4-2	ESD	2009
EN 61000-4-3	Radiated Immunity	2006+A2: 2010
EN 61000-4-4	EFT/B	2012
EN 61000-4-5	Surge	2014+A1:2017
EN 61000-4-6	Conducted RF Immunity	2014
EN 61000-4-11	Voltage dips and interruptions	2020

I hereby declare that the above mentioned product is in conformity with the stated Standards.

AUTHORISED SIGNATORY

Neil Pryke
Innovation Director

DATE: 1st Oct 2020

The technical file is available from our EU Headquarters:

Neil Pryke
Innovation Director
James Heal
Richmond Works
Halifax, UK
HX3 6EP

Setting the Standard

James H. Heal & Co. Ltd. Halifax England

www.james-heal.co.uk

UKCA Declaration of Conformity



UKCA DECLARATION OF CONFORMITY

This declaration is issued under the sole responsibility of the manufacturer.

We **James Heal**
of **Richmond Works, Halifax, HX3 6EP, UK**

& is in conformity with the relevant UK Statutory Instruments (and their amendments):

2008 No. 1597	The Supply of Machinery (Safety) Regulations 2008
2016 No. 1091	The Electromagnetic Compatibility Regulations 2016
2012 No. 3032	The Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment Regulations 2012

hereby declare that:

Equipment: **WickView**
Models: **1932 Series**
Description: **Moisture Management Tester**
Serial Number: **1932/20/1000 & subsequent**

is in conformity with the relevant Union harmonisation legislation, based on the conformity of the following documents:

Applied Harmonised Standards:

<i>Ref. No</i>	<i>Title</i>	<i>Edition/date</i>
BS EN 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements	2010+A1:2019
BS EN 61326-1	Electromagnetic Compatibility (EMC) Electrical equipment for measurement, control and laboratory use.	2013

BS EN 61326-1 Referenced Standards:

<i>Ref. No</i>	<i>Title</i>	<i>Edition/date</i>
EN 55011	Conducted & radiated emissions	2016+A11:2020
EN 61000-3-2	Harmonic emissions Class A	2019
EN 61000-3-3	Flicker	2013+A1:2019
EN 61000-4-2	ESD	2009
EN 61000-4-3	Radiated Immunity	2008+A2: 2010
EN 61000-4-4	EFT/B	2012
EN 61000-4-5	Surge	2014+A1:2017
EN 61000-4-6	Conducted RF Immunity	2014
EN 61000-4-11	Voltage dips and interruptions	2020

I hereby declare that the above mentioned product is in conformity with the stated Standards.

AUTHORISED SIGNATORY

Neil Pryke
Innovation Director
DATE: 1st Jan 2021

The technical file is available from our UK Headquarters:

Neil Pryke
Innovation Director
James Heal
Richmond Works
Halifax, UK
HX3 6EP

Setting the Standard

James H. Heal & Co. Ltd. Halifax England

www.james-heal.co.uk