Zwick / Roell

Intelligent Testing

testXpert® III

Testing Software

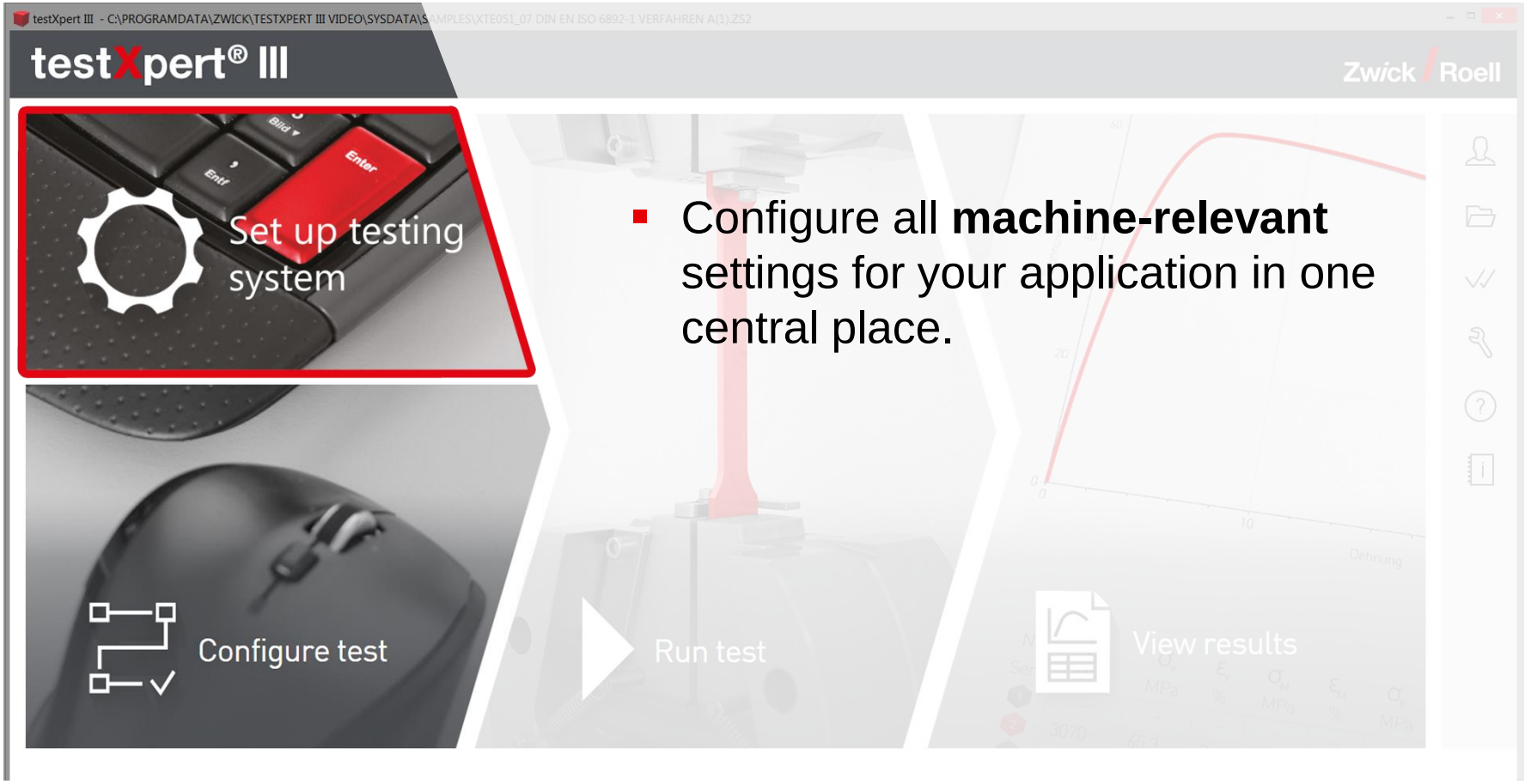
testXpert® III

…is intuitive and workflow-based

that prevents operator error?

testXpert® III is intuitive & workflow-based

Getting started is easy! Experience a workflow that reflects the work processes used in your lab.

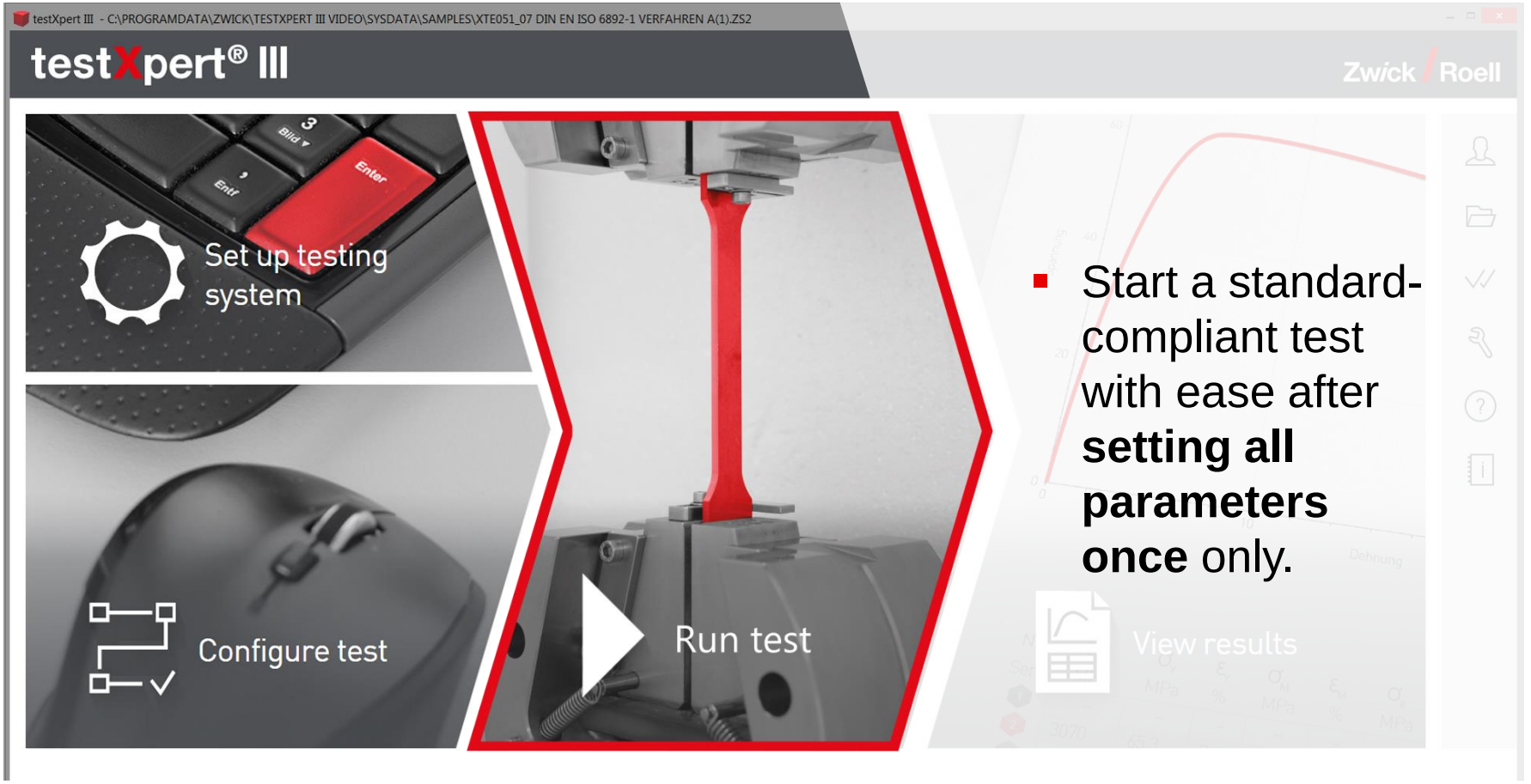


testXpert® III is intuitive & workflow-based

Getting started is easy! Experience a workflow that reflects the work processes used in your lab.

testXpert® III is intuitive & workflow-based

Getting started is easy! Experience a workflow that reflects the work processes used in your lab.



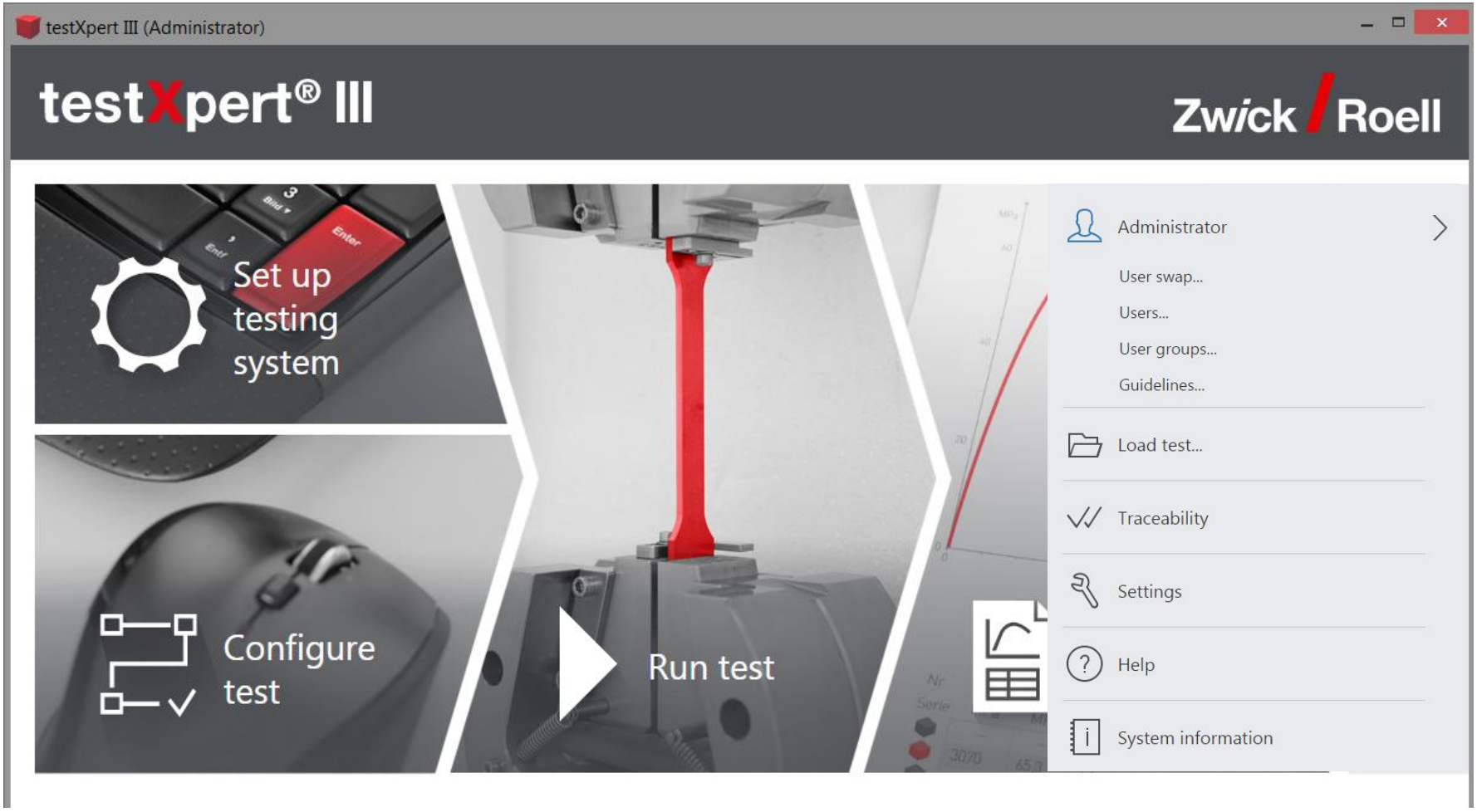
testXpert® III is intuitive & workflow-based

Getting started is easy! Experience a workflow that reflects the work processes used in your lab.

- All series & exports can be viewed in an additional **secure mode** protected from manipulation.

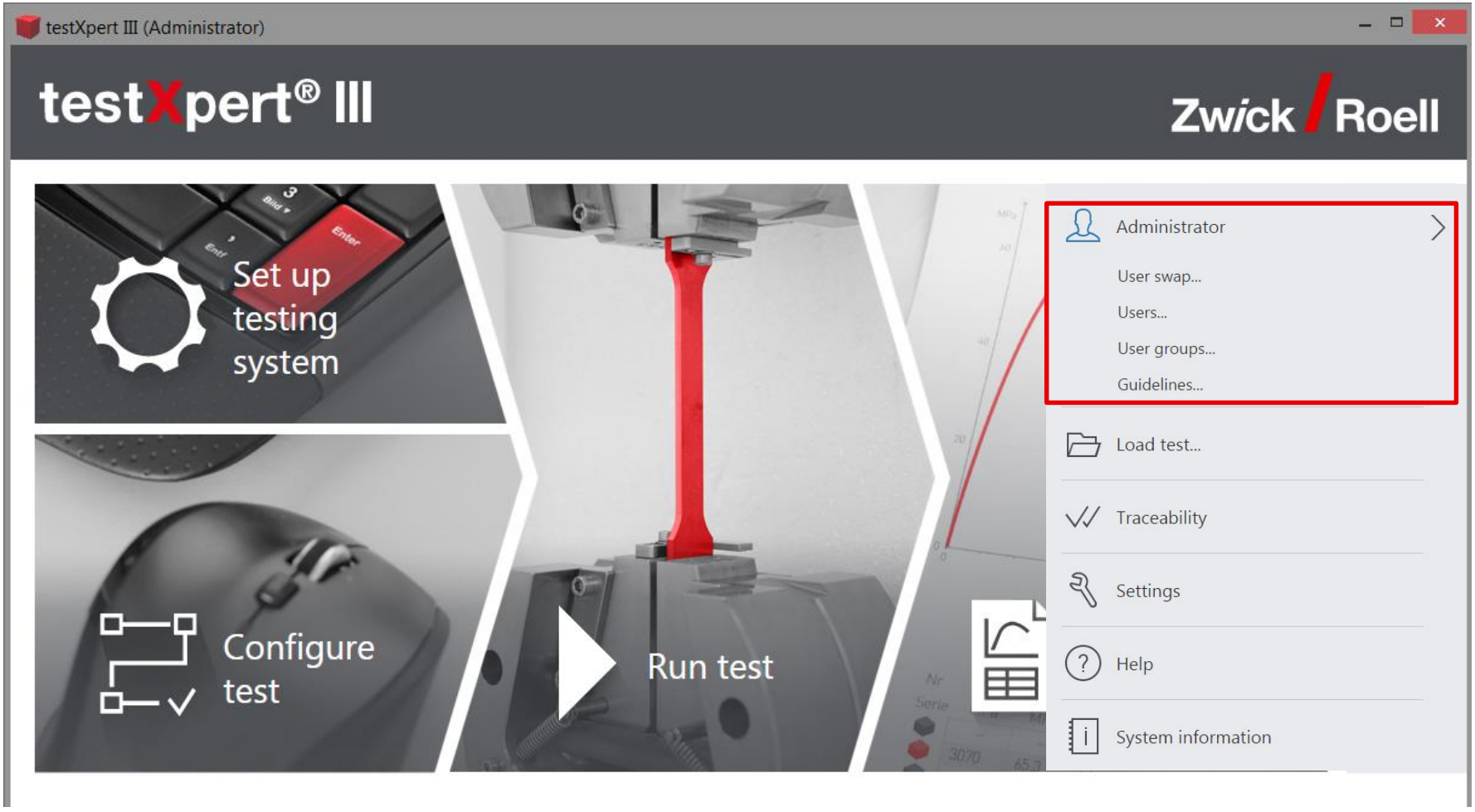
testXpert® III is intuitive & workflow-based

In testXpert III all test-relevant settings are logically grouped and kept separate from general system settings.



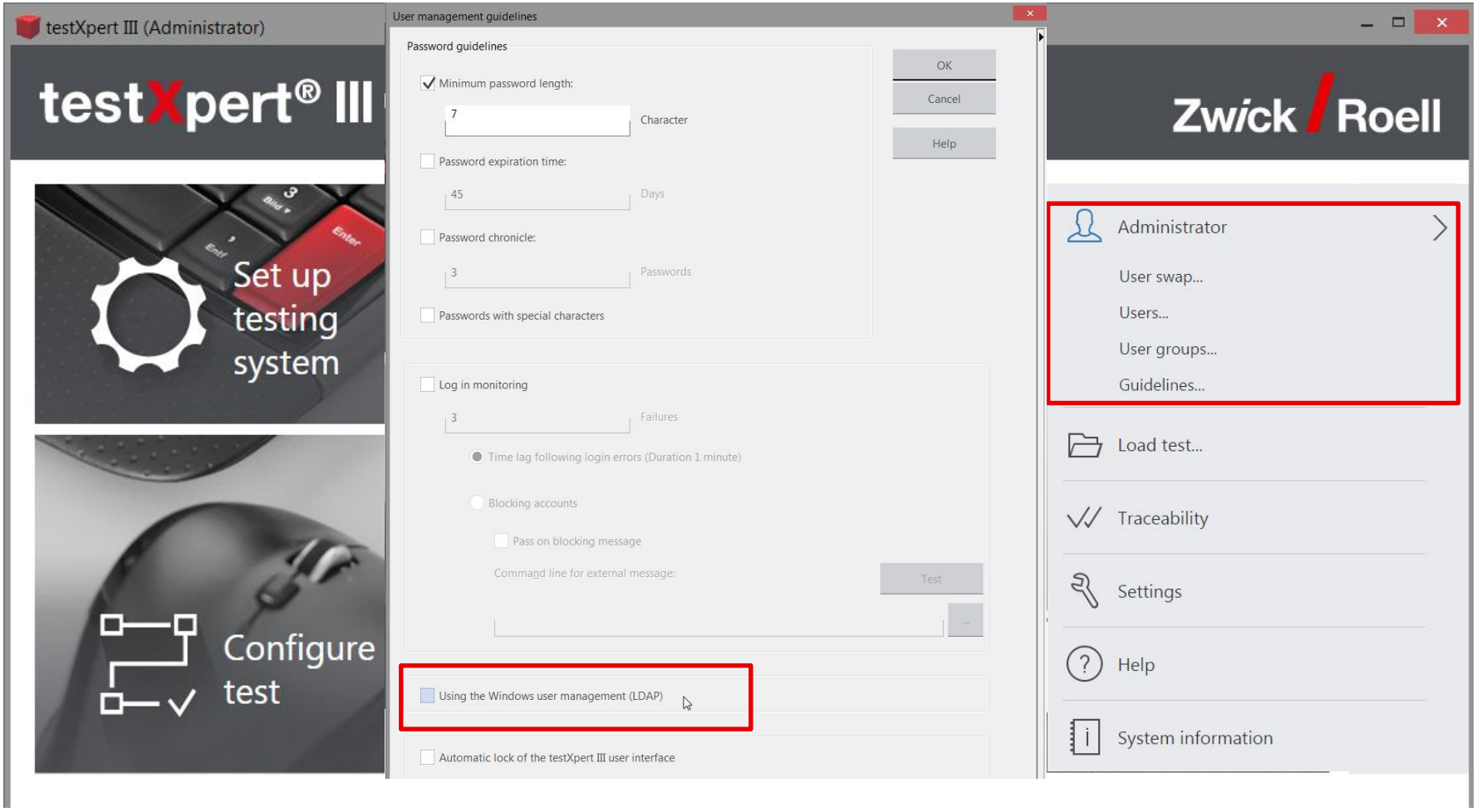
testXpert® III is intuitive & workflow-based

testXpert III is a role-based software with integrated user management.



testXpert® III is intuitive & workflow-based

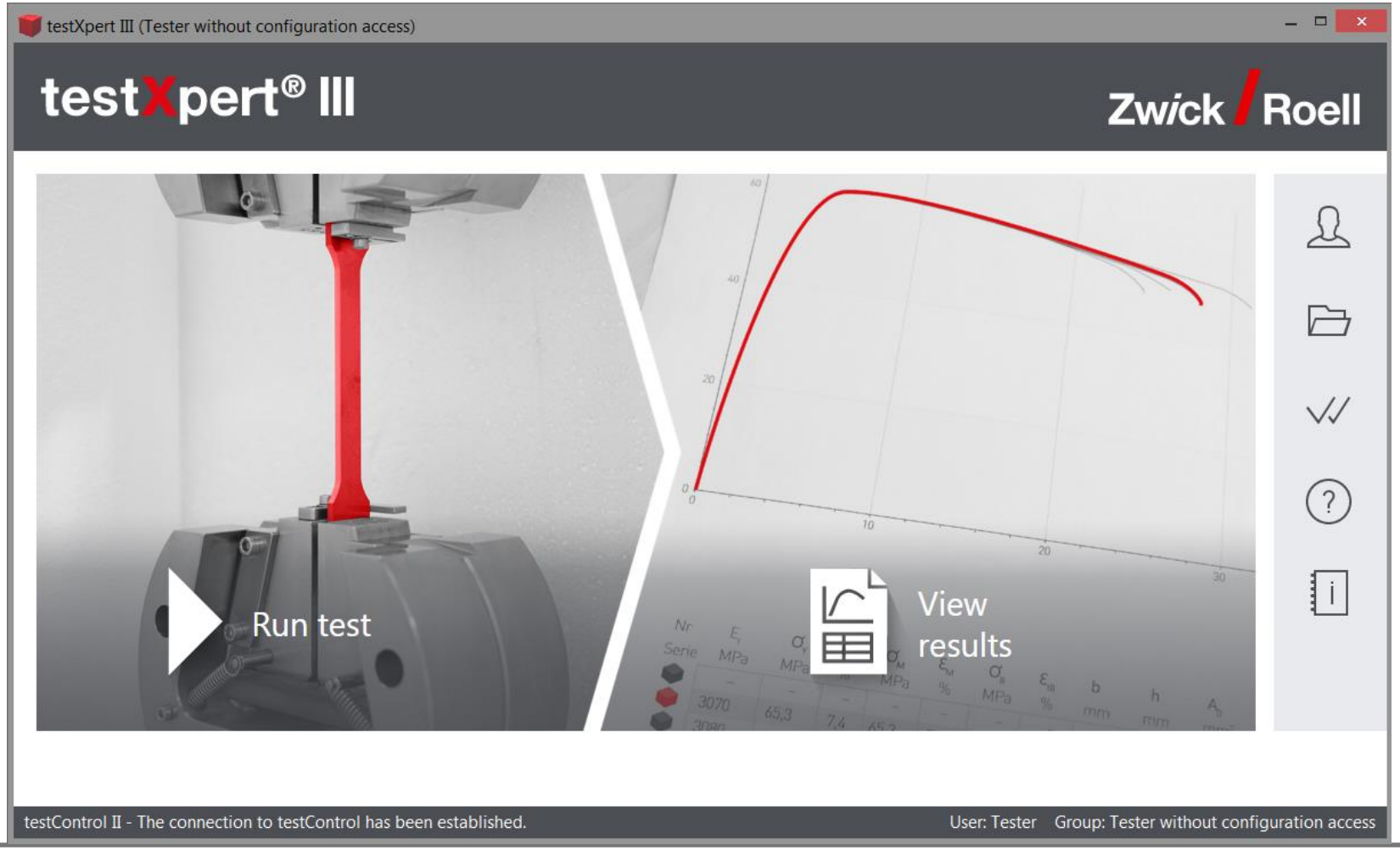
testXpert III is a role-based software with integrated user management. Use of Windows accounts is possible.



testXpert® III is intuitive & workflow-based

Zwick / Roell

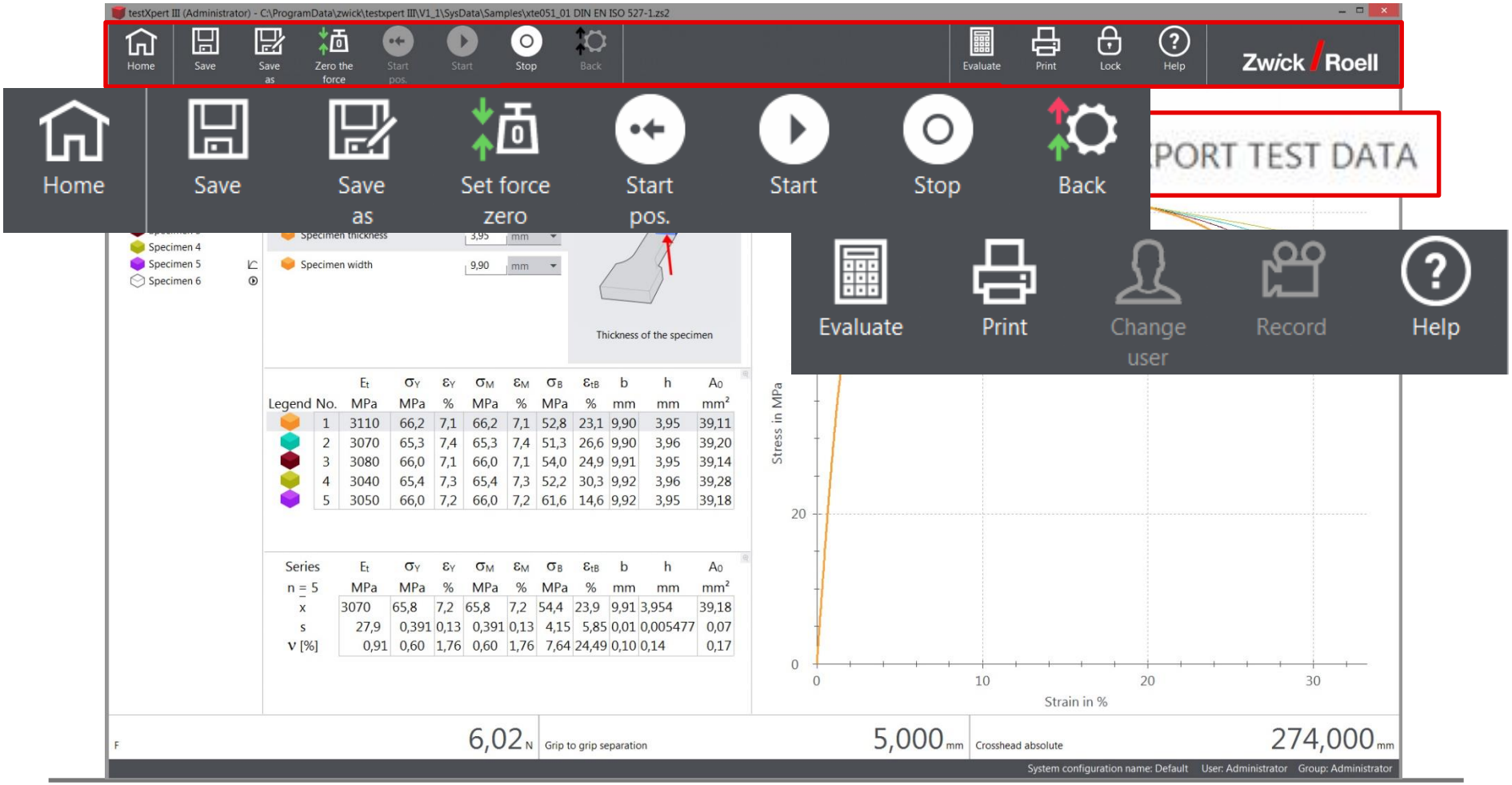
Users see only what is important to them and can focus on the task at hand right from the start. This keeps training time to a minimum.



testXpert® III is intuitive & workflow-based

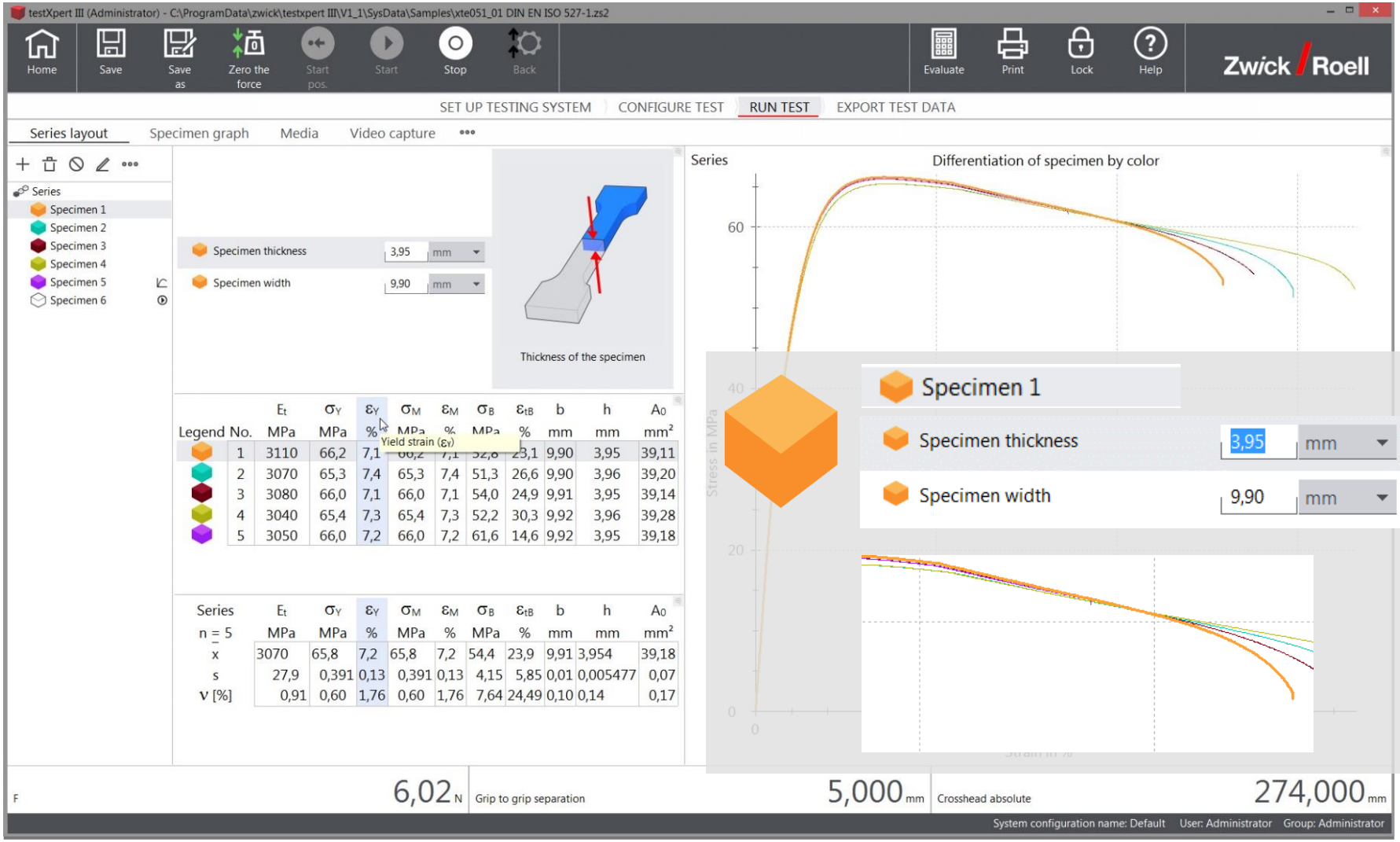
Zwick / Roell

Navigate through each test in the same straightforward way. Expressive icons make it fast and easy to find what you need.



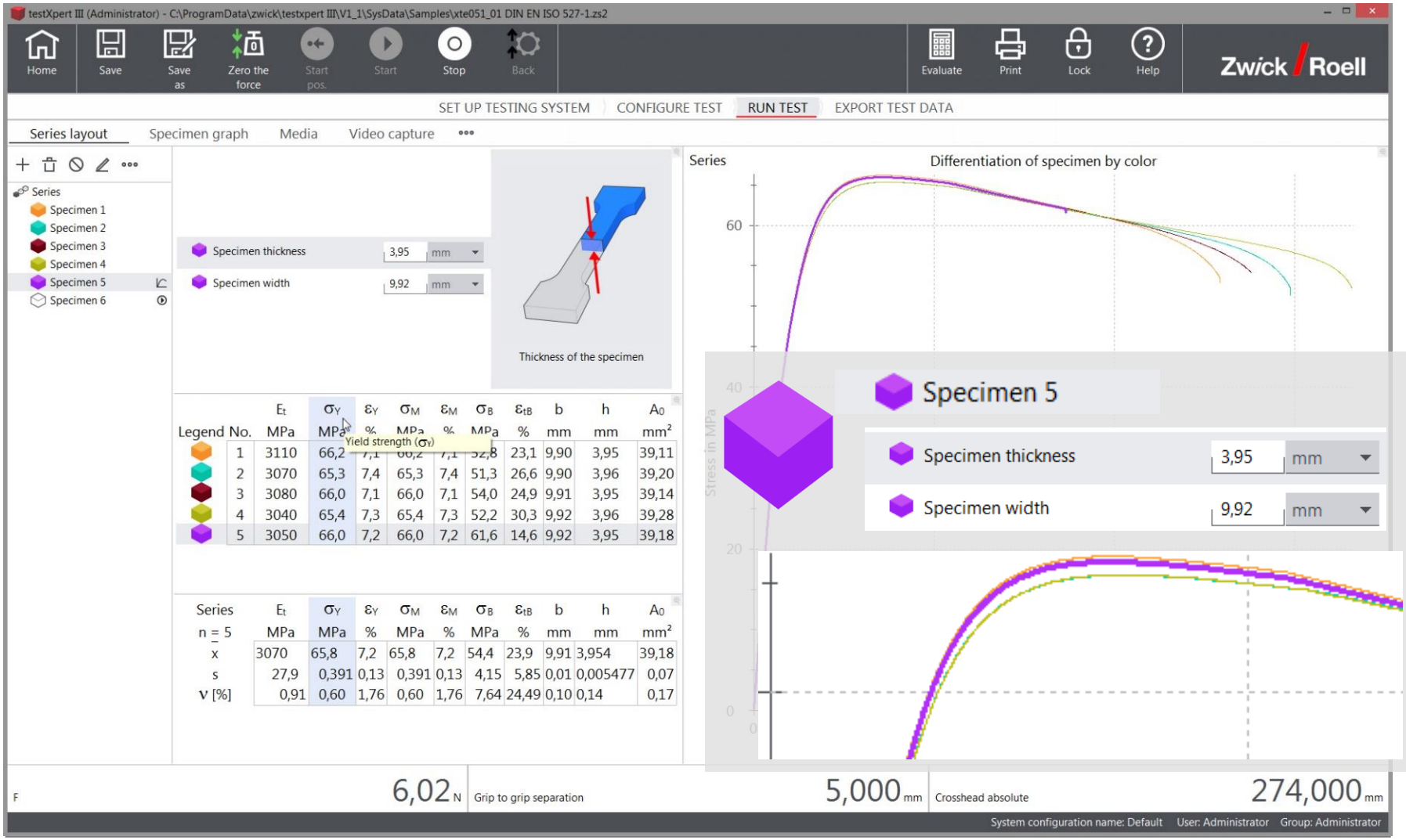
testXpert® III is intuitive & workflow-based

All related information is associated visually.



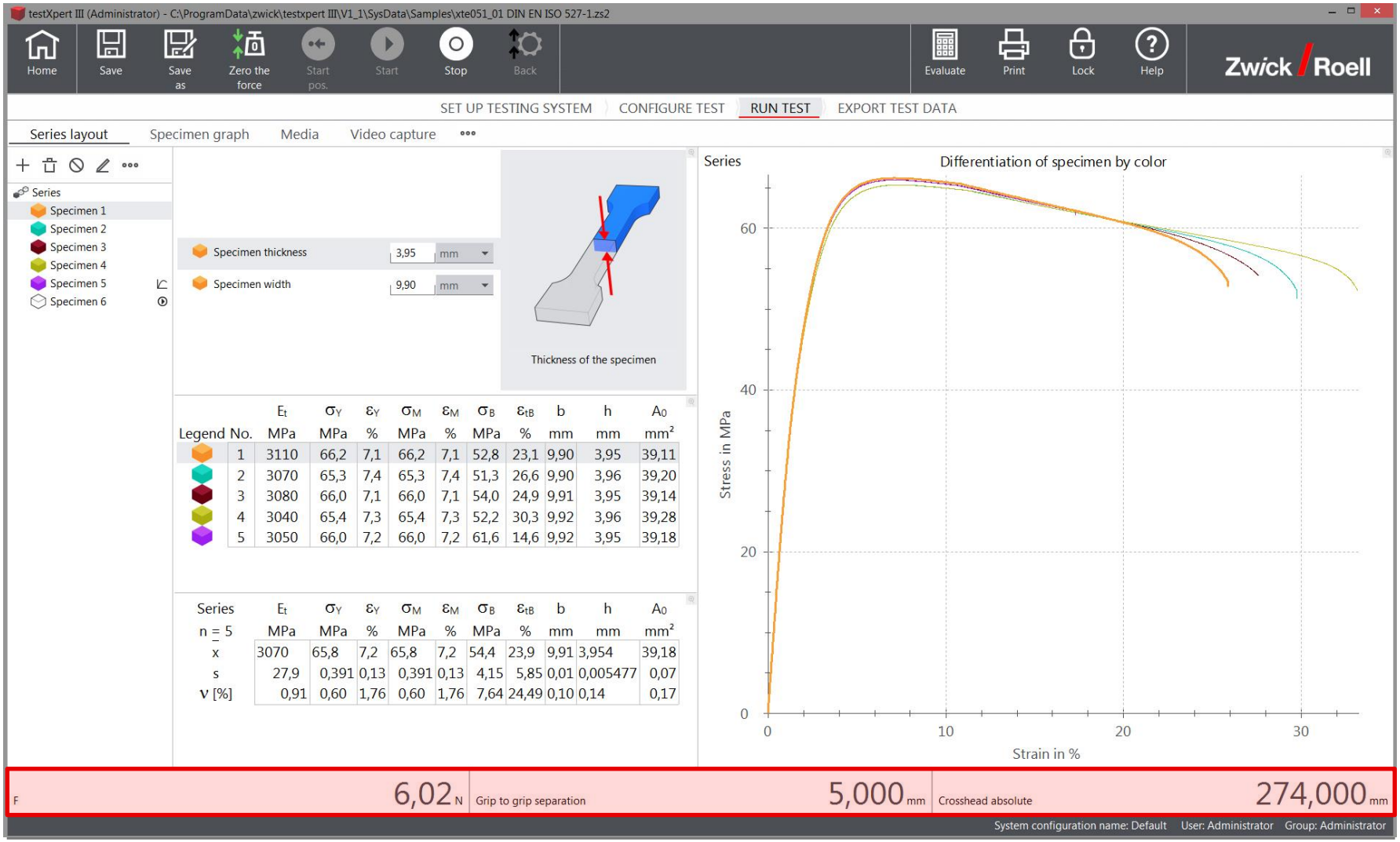
testXpert® III is intuitive & workflow-based

All related information is associated visually.



testXpert® III is intuitive & workflow-based

Channel and status is displayed throughout the entire test.

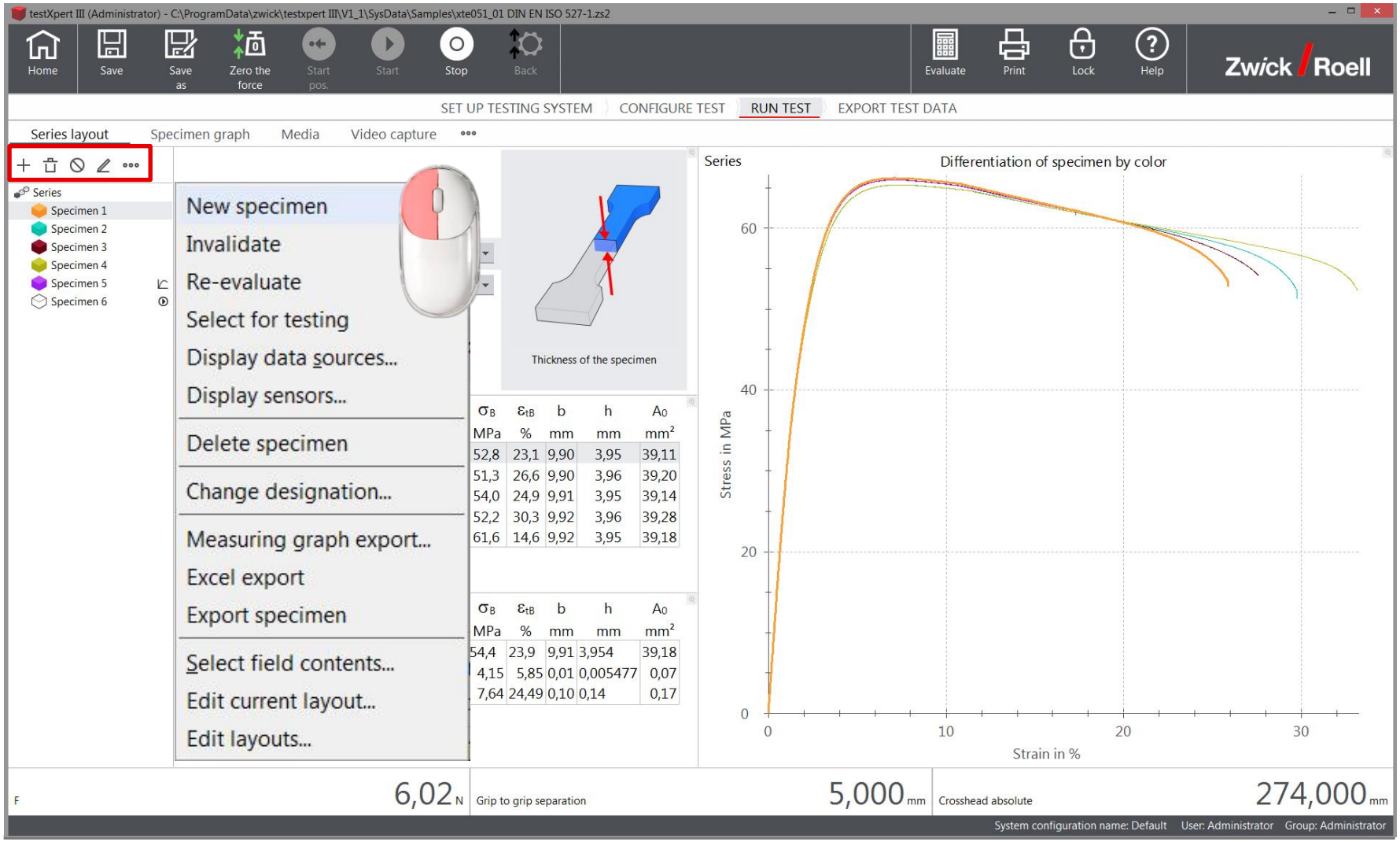


Legend	No.	E_t MPa	σ_Y MPa	ε_Y %	σ_M MPa	ε_M %	σ_B MPa	ε_{tB} %	b mm	h mm	A_0 mm²
	1	3110	66,2	7,1	66,2	7,1	52,8	23,1	9,90	3,95	39,11
	2	3070	65,3	7,4	65,3	7,4	51,3	26,6	9,90	3,96	39,20
	3	3080	66,0	7,1	66,0	7,1	54,0	24,9	9,91	3,95	39,14
	4	3040	65,4	7,3	65,4	7,3	52,2	30,3	9,92	3,96	39,28
	5	3050	66,0	7,2	66,0	7,2	61,6	14,6	9,92	3,95	39,18

Series n = 5	E_t MPa	σ_Y MPa	ε_Y %	σ_M MPa	ε_M %	σ_B MPa	ε_{tB} %	b mm	h mm	A_0 mm²
$\bar{x}$	3070	65,8	7,2	65,8	7,2	54,4	23,9	9,91	3,954	39,18
s	27,9	0,391	0,13	0,391	0,13	4,15	5,85	0,01	0,005477	0,07
ν [%]	0,91	0,60	1,76	0,60	1,76	7,64	24,49	0,10	0,14	0,17

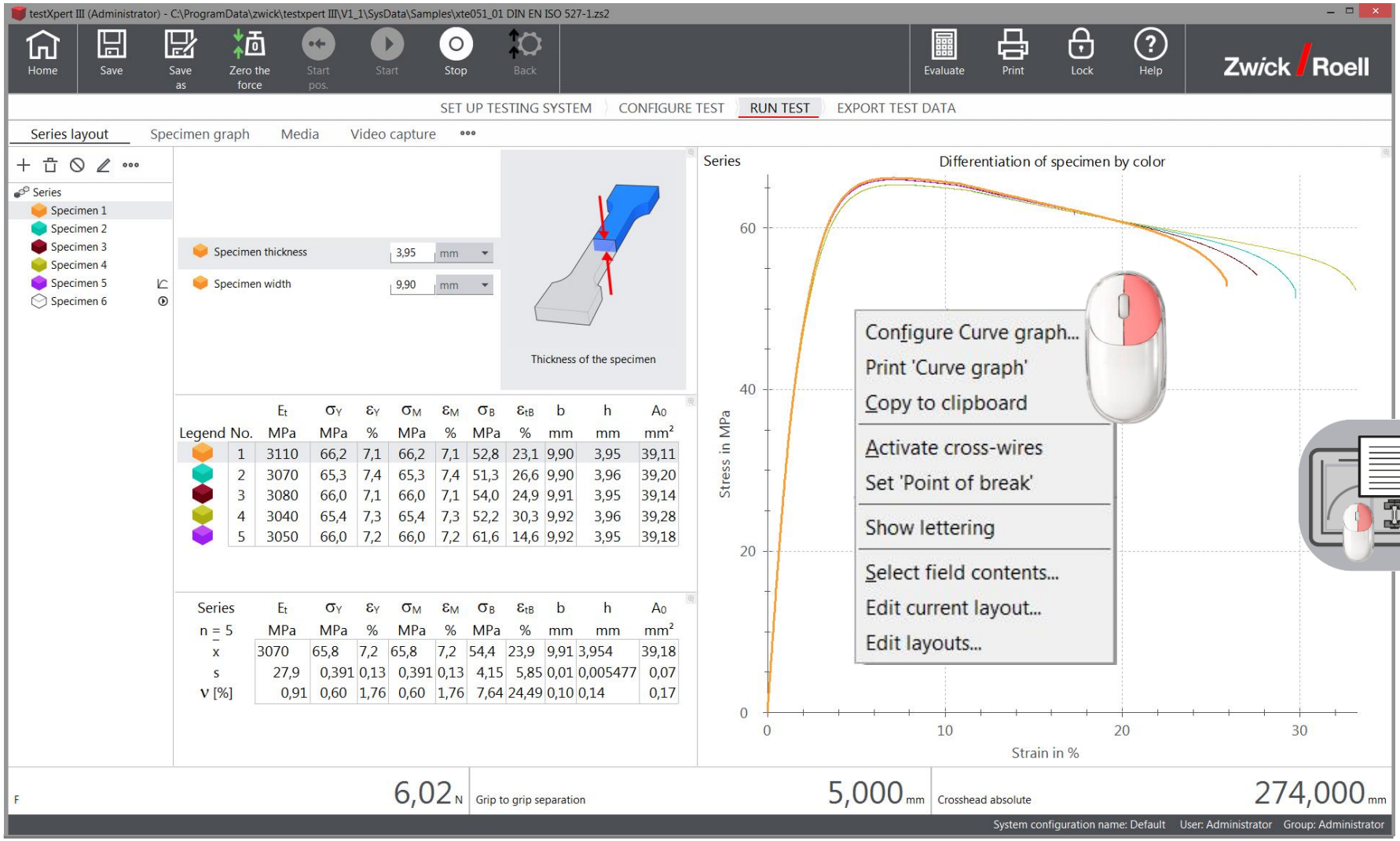
testXpert® III is intuitive & workflow-based

Additional functionalities are available via buttons if needed.



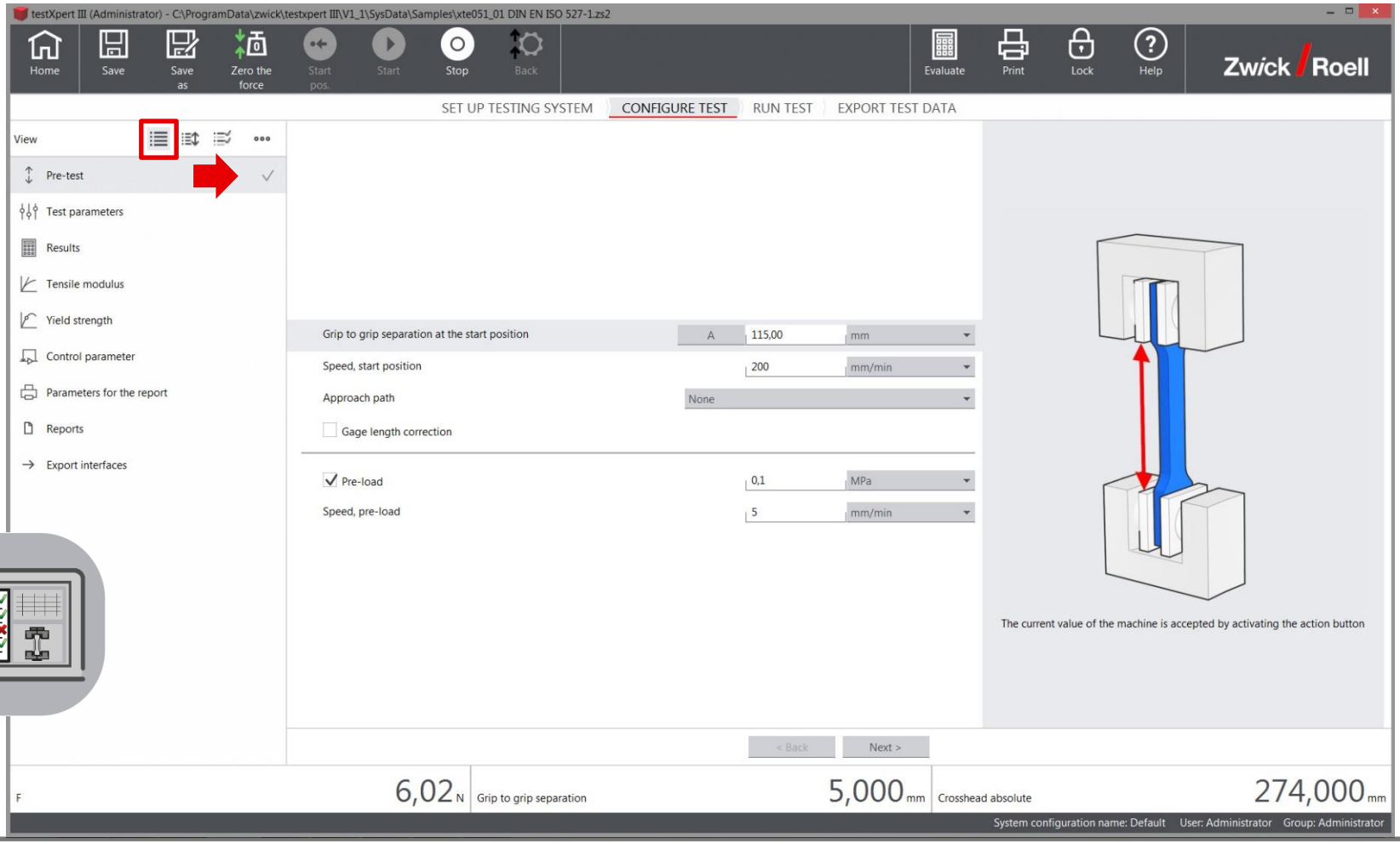
testXpert® III is intuitive & workflow-based

Additional functionalities are available via context menu if needed.



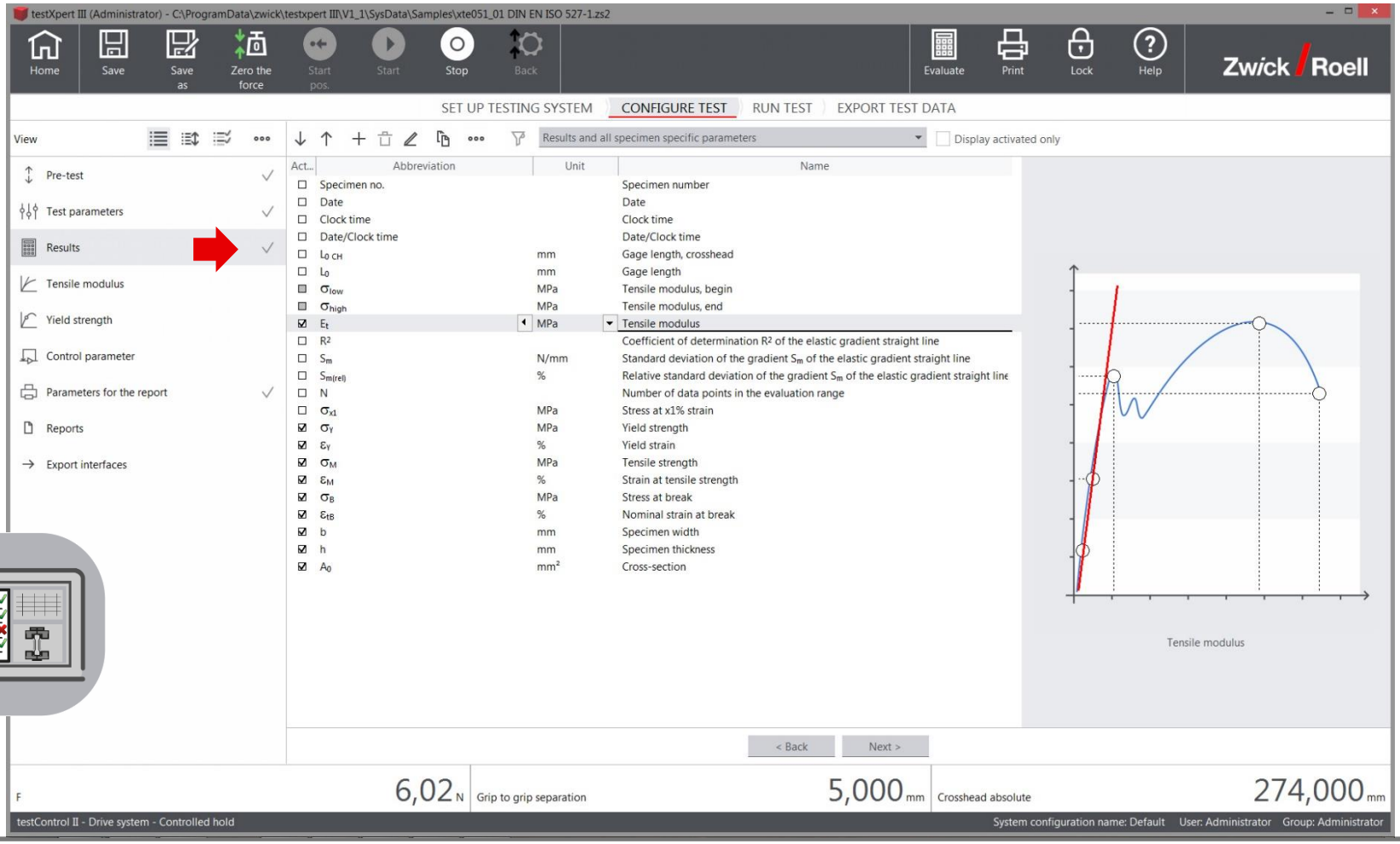
testXpert® III is intuitive & workflow-based

An intelligent wizard function enables easy and structured input of all test parameters and automatic verification of entries for plausibility.



testXpert® III is intuitive & workflow-based

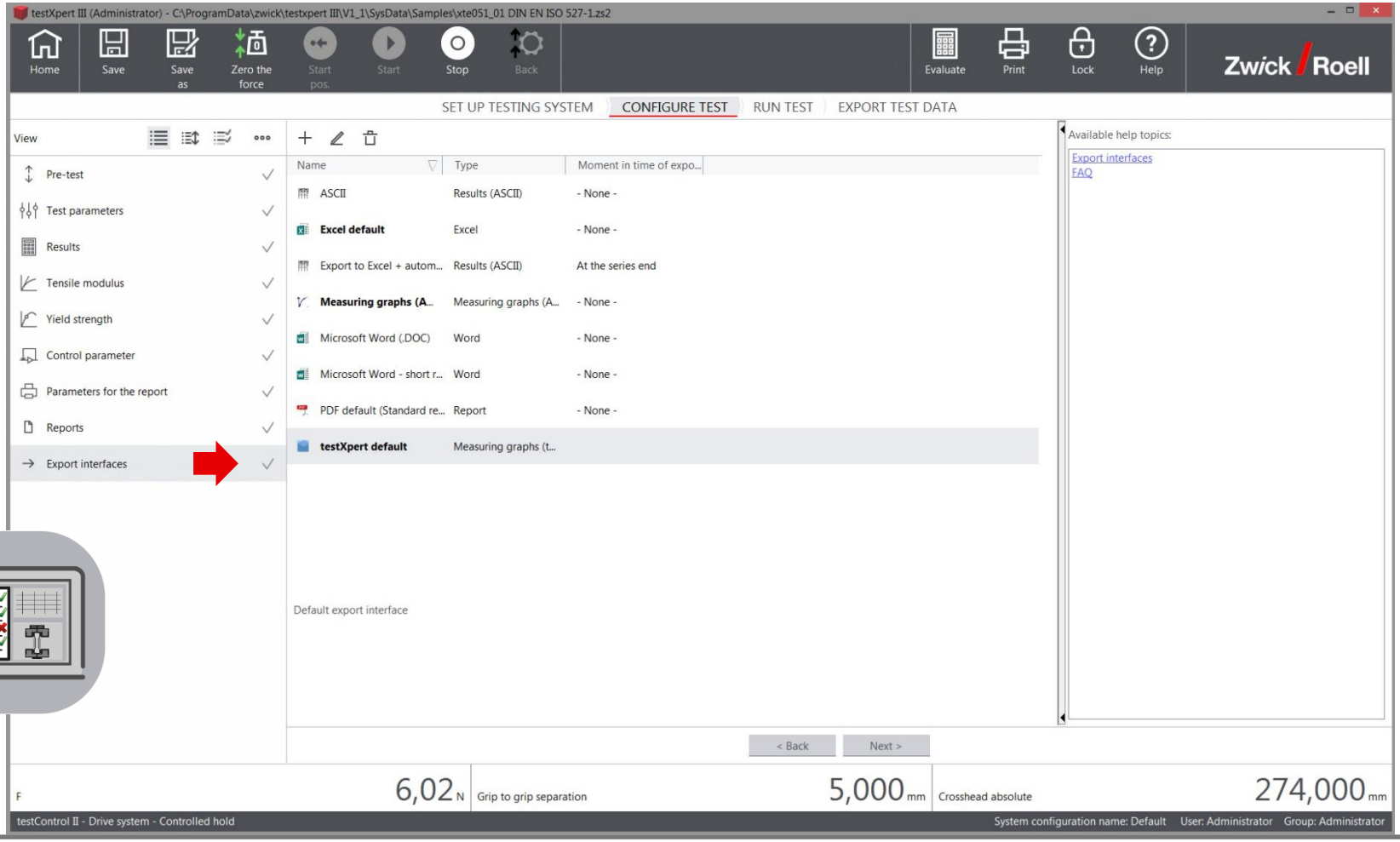
The intelligent wizard guides you systematically through the test configuration.



testXpert® III is intuitive & workflow-based

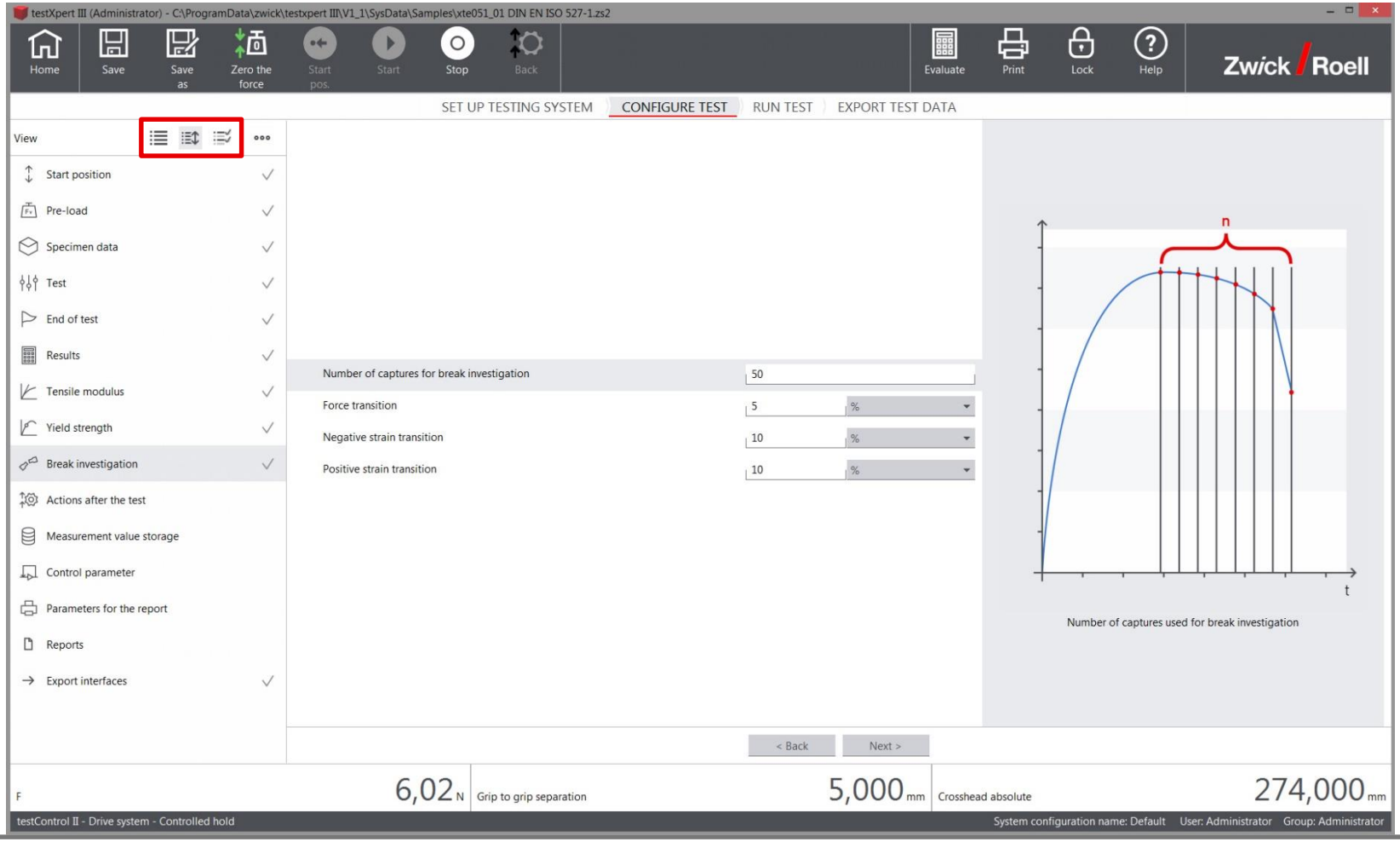
Zwick / Roell

Once you set all the options and parameters you need for testing and exporting the test data, you're ready to start the test.



testXpert® III is intuitive & workflow-based

You can use the standard, expanded or even customized intelligent wizard for advanced adjustments.



testXpert® III

…offers prepared standard tests

standardized test methods?

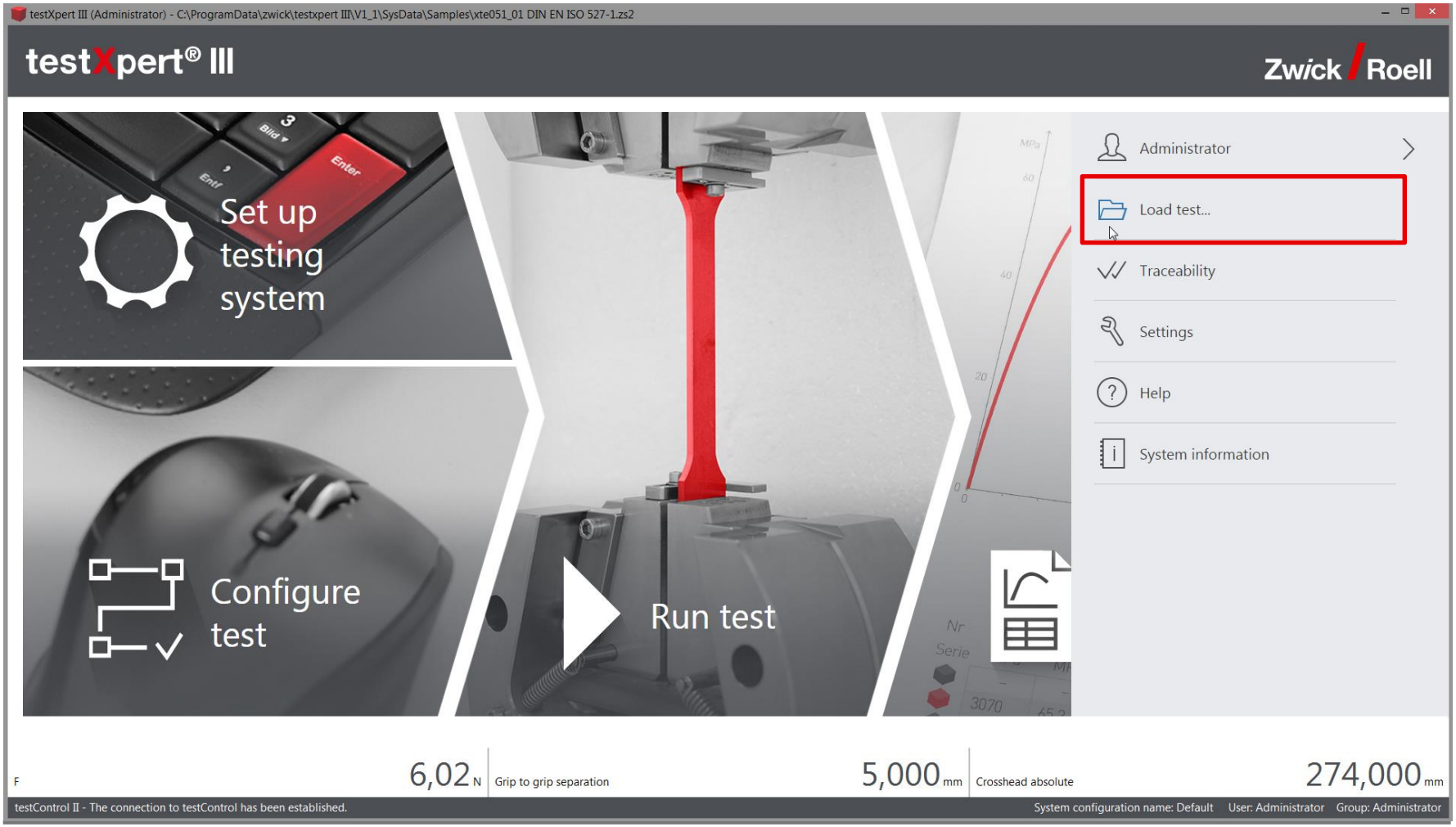
testXpert® III offers prepared standard tests

testXpert III contains over 600 Standard Test Programs, enabling you to find the right test program for almost any standard.

- All requirements, results and reports are already pre-configured in your industry, your expert will take this into account.

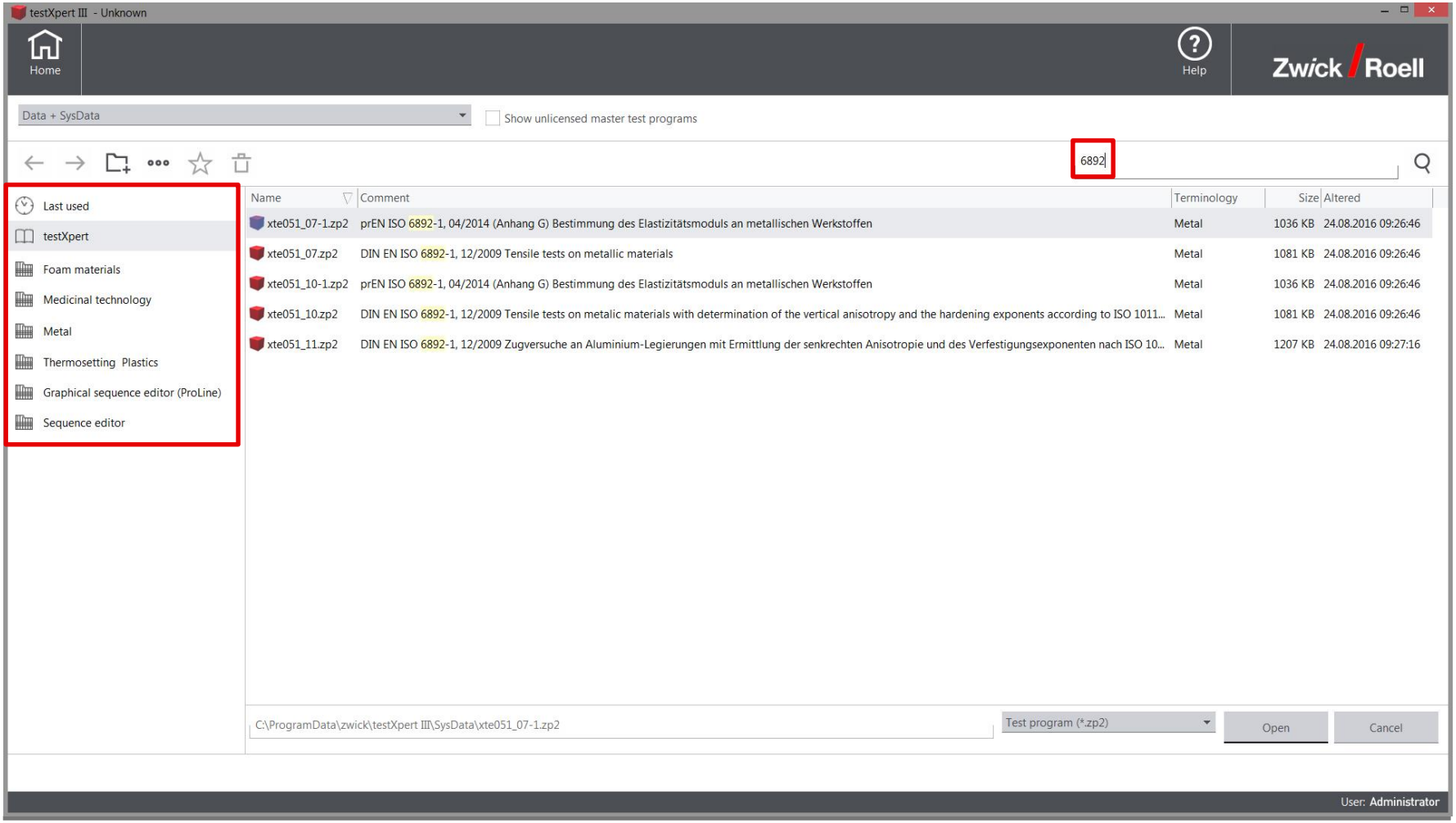
testXpert® III offers prepared standard tests

We understand our customers' industries. Special functions & terminology make testXpert III tests optimized for each industry.



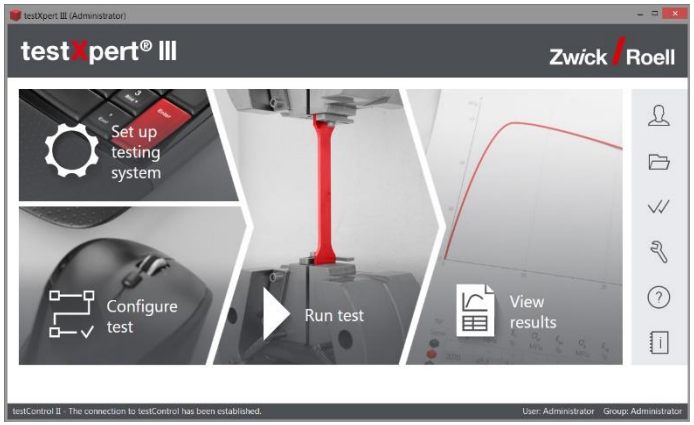
testXpert® III offers prepared standard tests

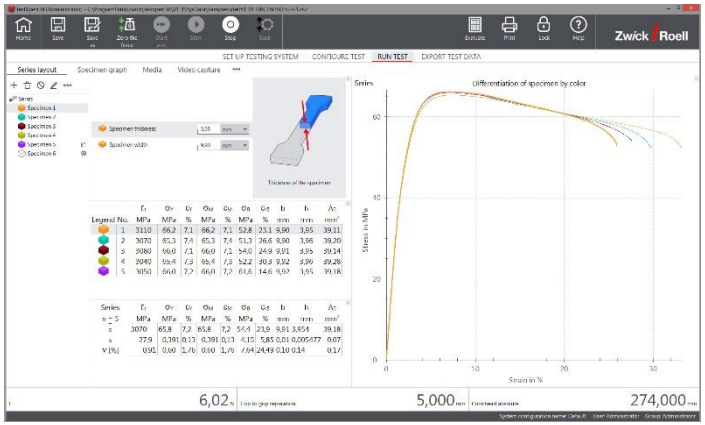
You can instantly start a Standard Compliant Test in your application in just a few seconds with the Open & Search dialog.



testXpert® III offers prepared standard tests

Standard-compliant testing can be as easy as that!



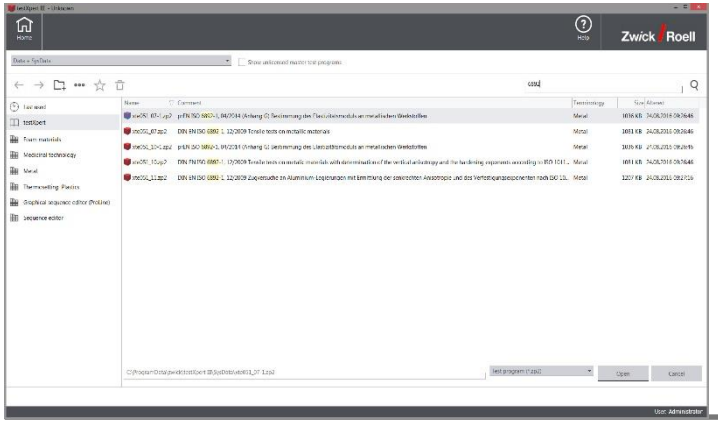


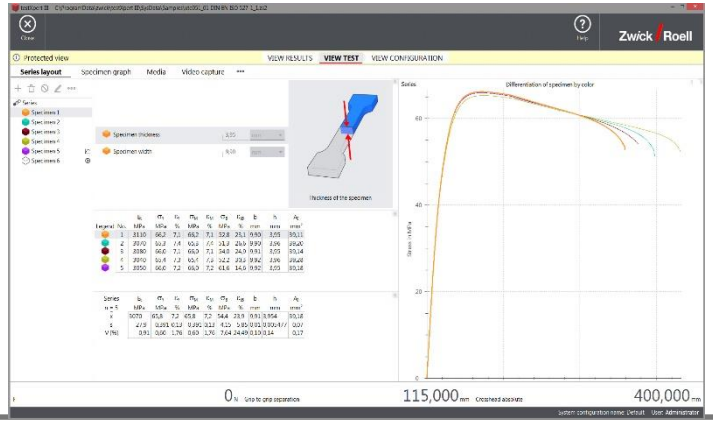
Open **testXpert® III**

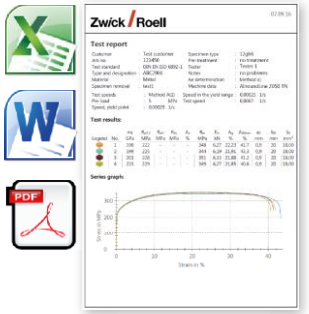
Run test

Load test program

View report and test settings







testXpert® III

…is versatile

Or the same software for different types of machines?

testXpert® III is versatile

testXpert III is the result of close cooperation with software users in the materials testing industry and the experience of over 30,000 successful testXpert installations.

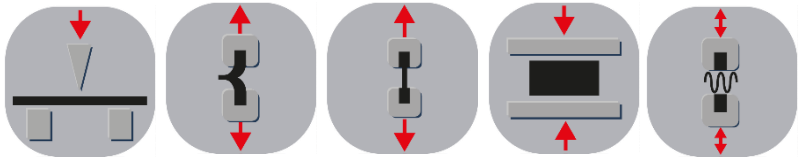
- The workflow-based philosophy of testXpert III fits to all testing machines & instruments of the ZwickRoell Group.
- The same software can be used for all applications and test types.

testXpert® III is versatile

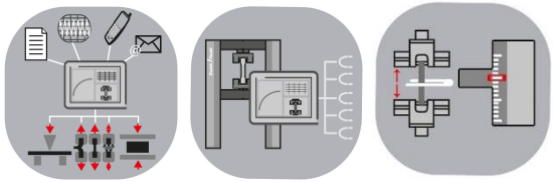
testXpert III offers you a superior product portfolio.

Standard Test Programs

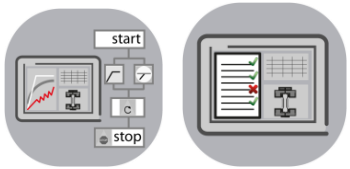
Master Test Programs



Options/Sensors

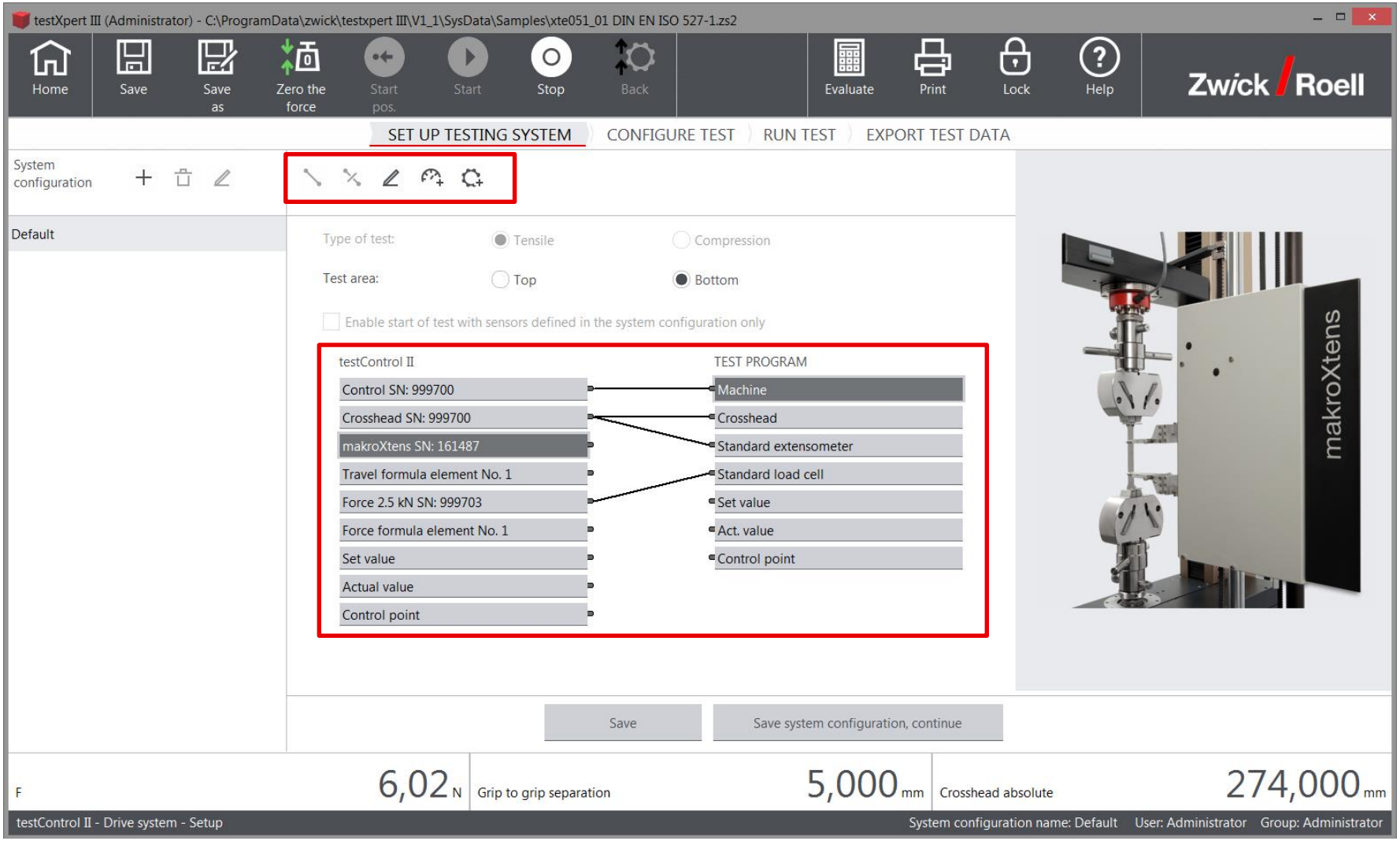


Graphical Sequence Editor/ Customized Solutions



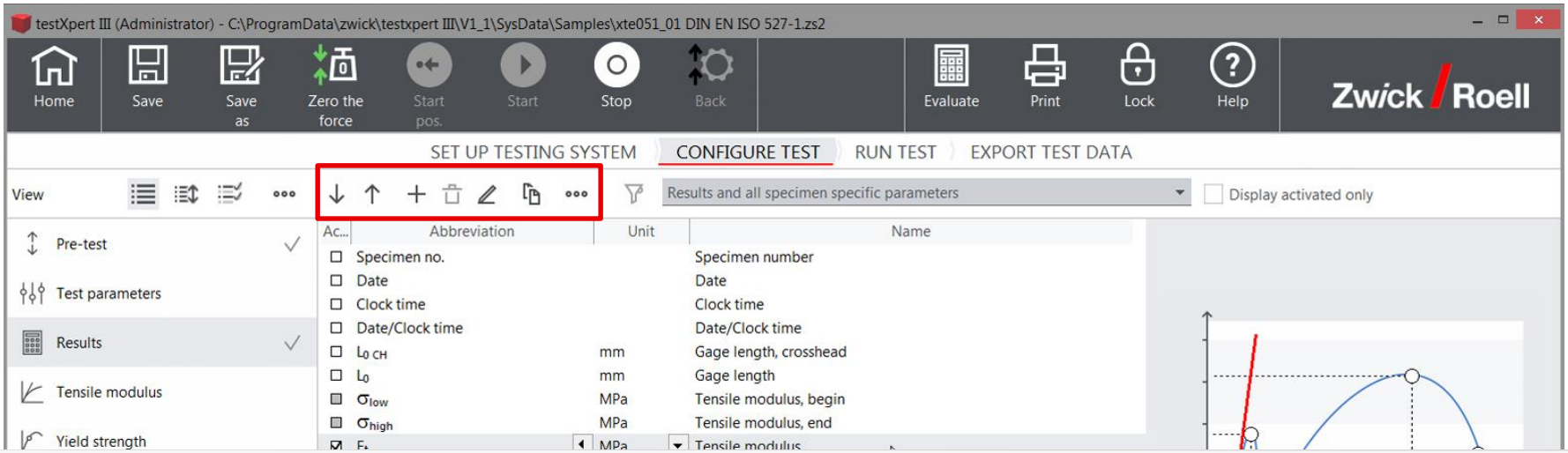
testXpert® III is versatile

Additional channels can be easily added in testXpert III.

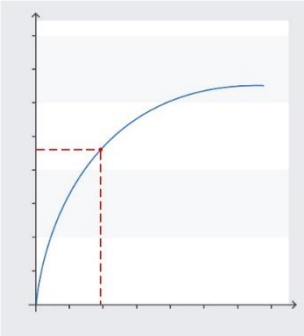


testXpert® III is versatile

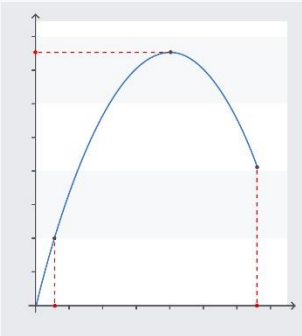
Additional results can be easily added in testXpert III.



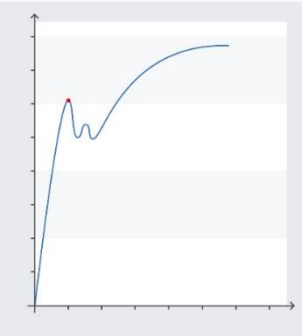
Reference values

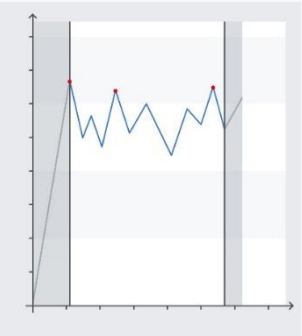


Statistical values

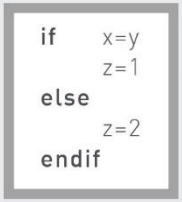


Peaks/ Gradients





Complex ZIMT results



testXpert® III

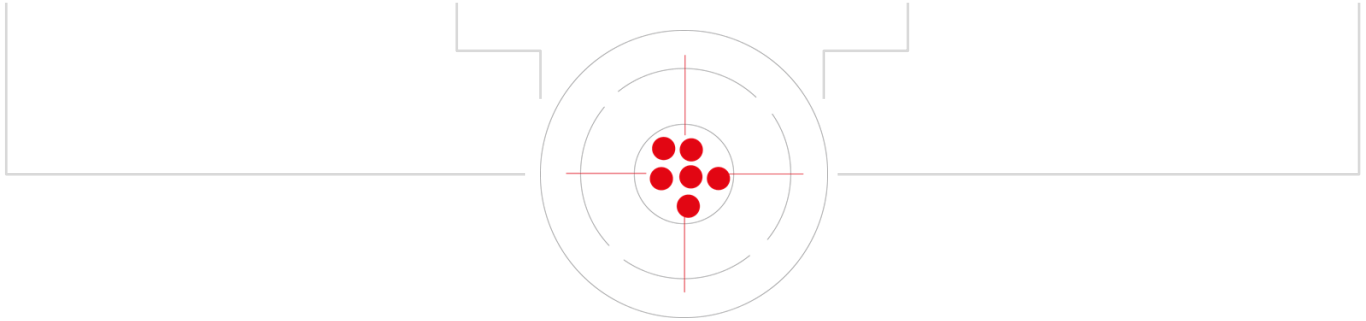
…ensures reliable test results

traceable results?

testXpert® III ensures reliable test results

ZwickRoell, together with its machine and software solutions, stands for accuracy, repeatability and reproducibility and for seamless result traceability.

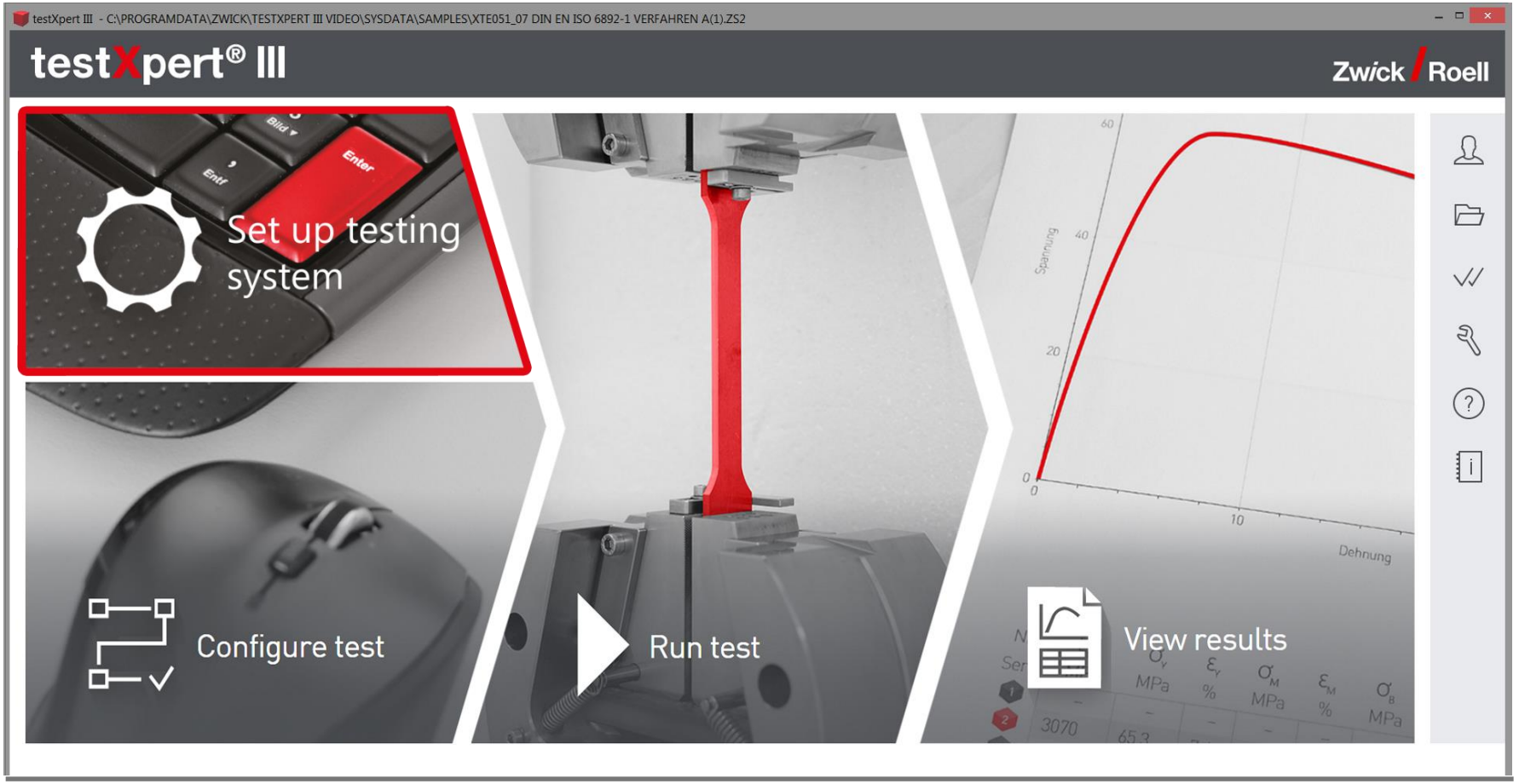
accurate	repeatable	reproducible	traceable
Our machines operate with precision. The average of the test results obtained is very close to the reference value.	When tests are repeated under the same conditions, the results obtained are closely grouped.	When ZwickRoell machines performing the same test are compared, the results are reproducible.	The continuous documentation of calibrations and tests makes all results transparent and traceable.



testXpert® III ensures reliable test results

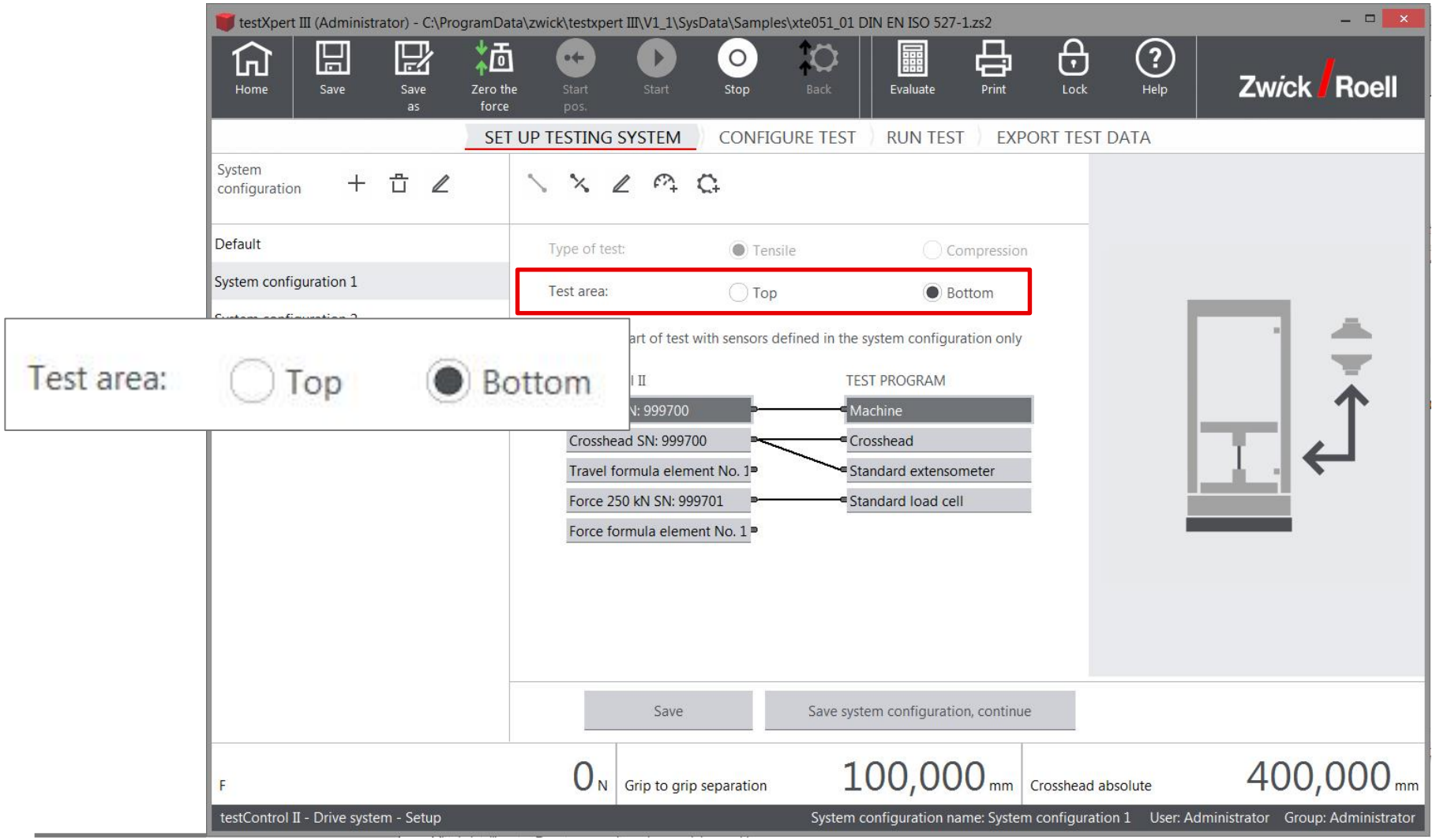
Zwick / Roell

You can define reproducible test conditions with our unique System Configuration Builder, which guarantees repeatability of the test results.

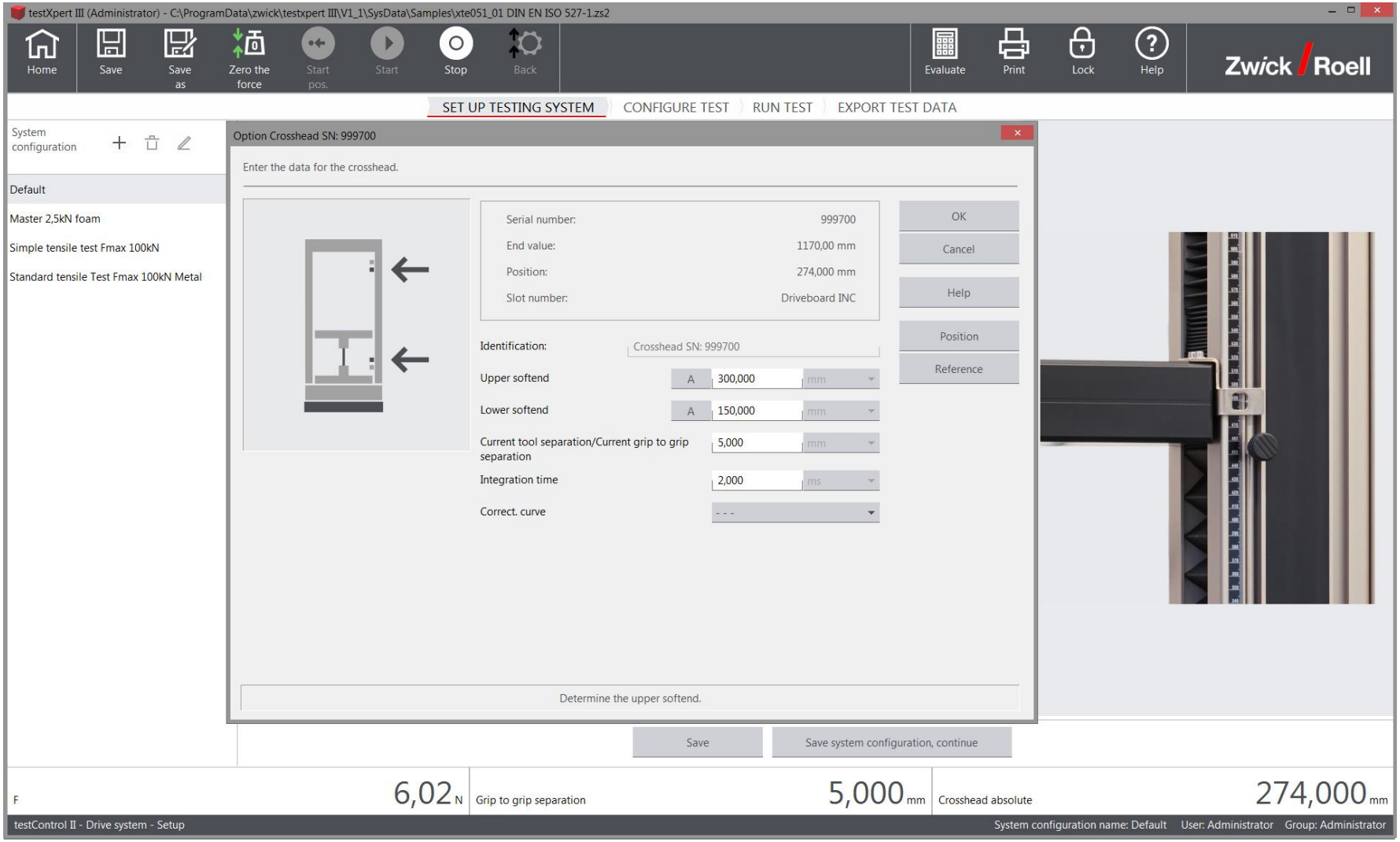


testXpert® III ensures reliable test results

Select the test area you're operating in.

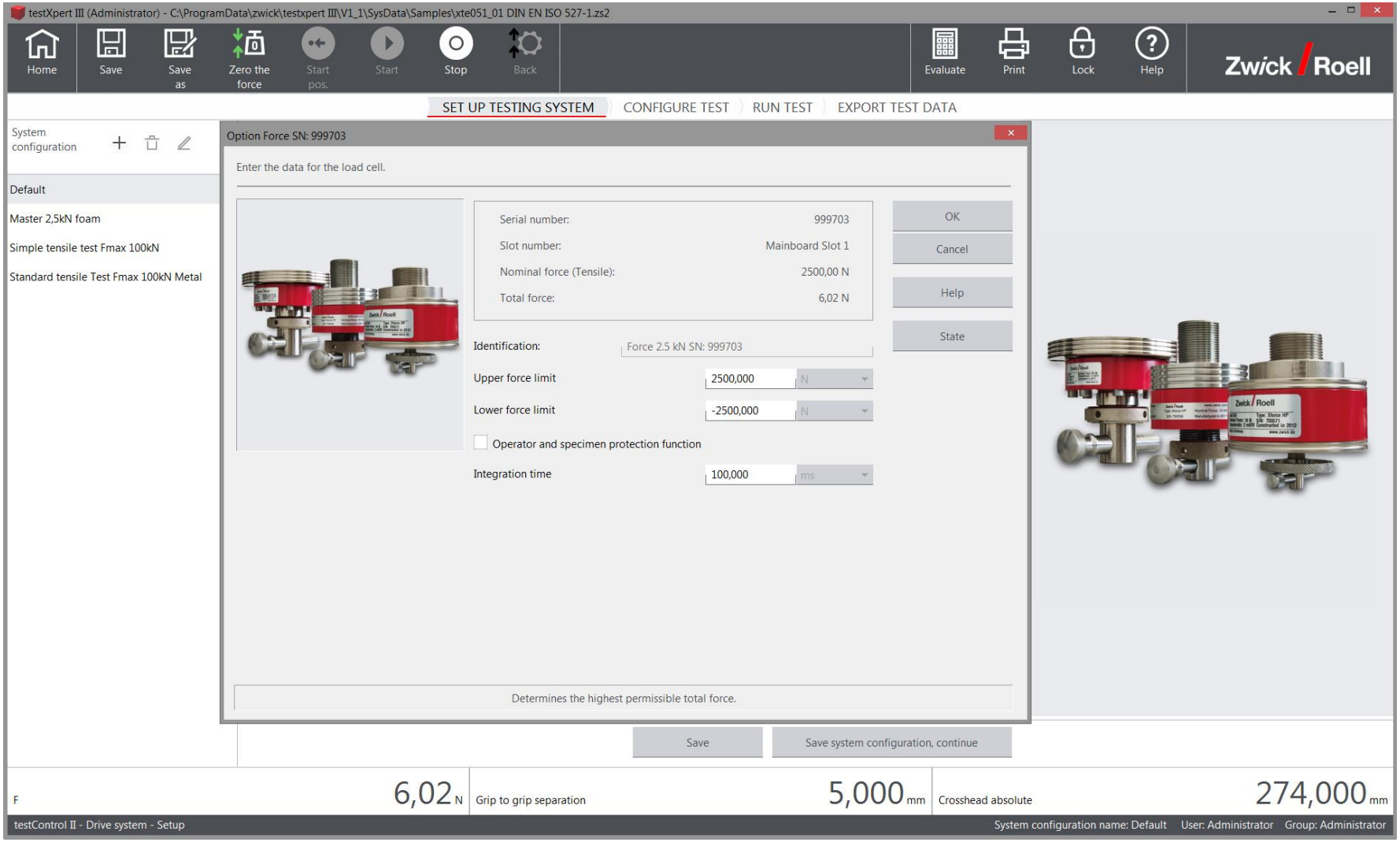


Set the start and safety positions of the crosshead.



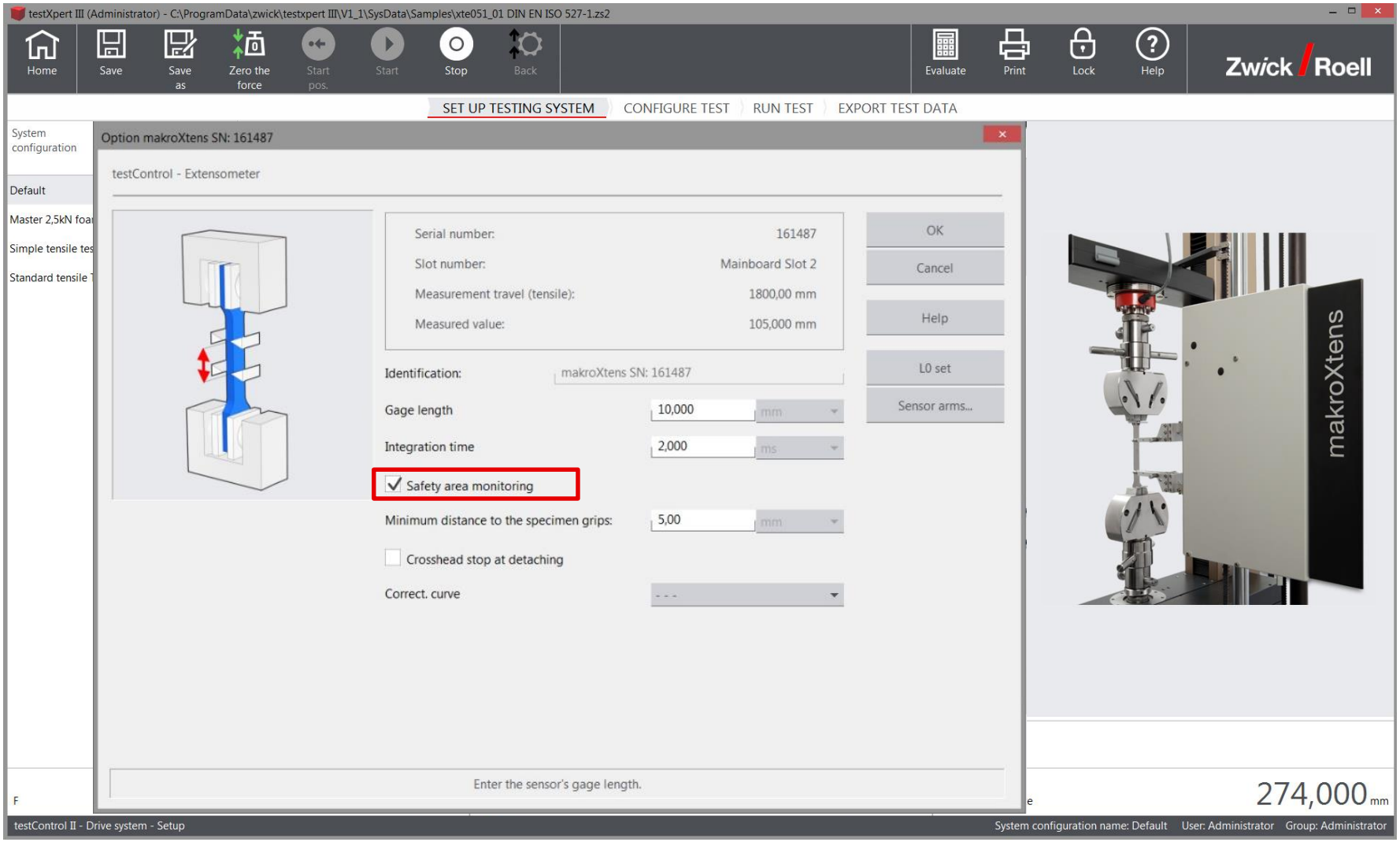
testXpert® III ensures reliable test results

Set the force limits to protect the user and testing system.



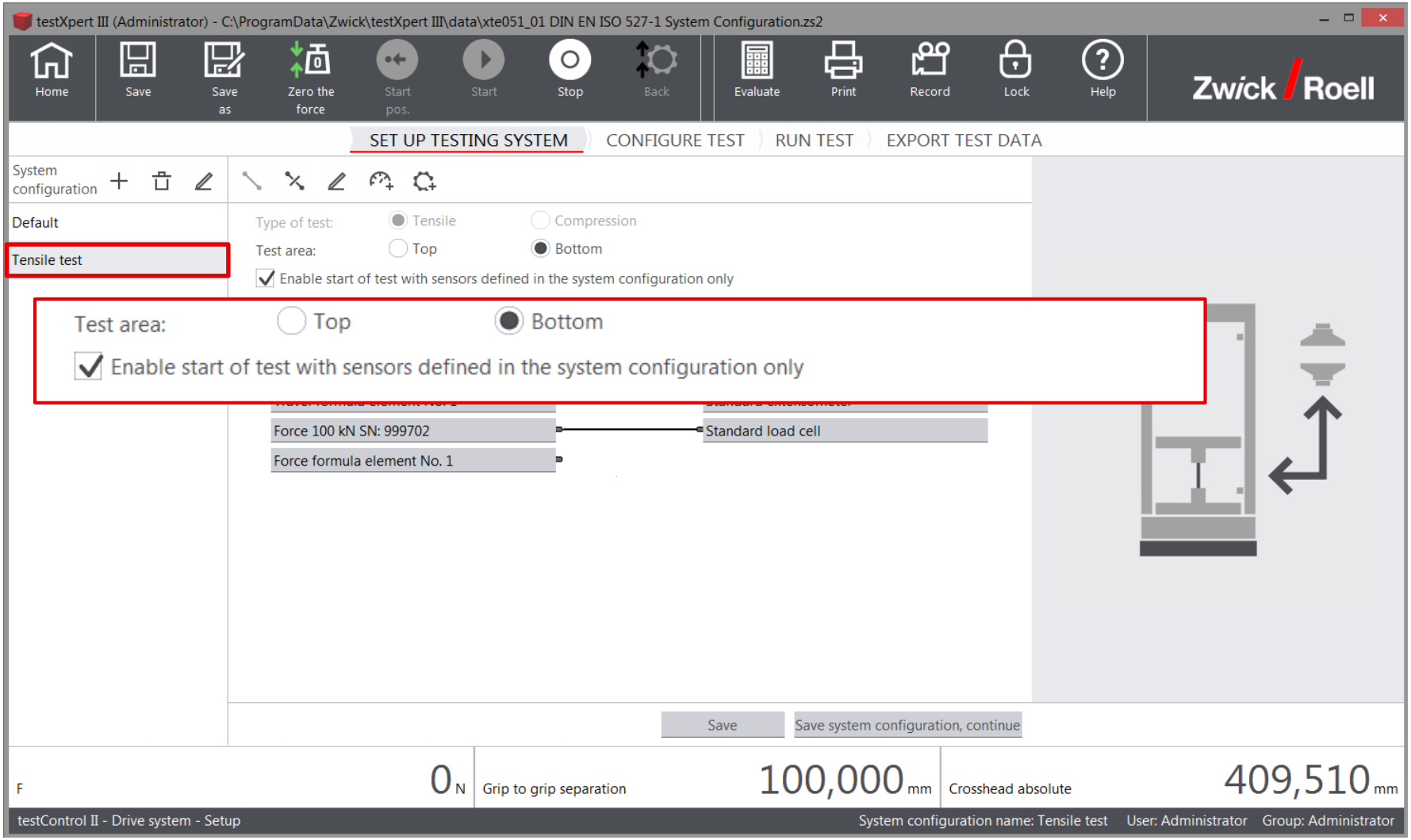
testXpert® III ensures reliable test results

Set up the safety area to protect the tools and extensometers.



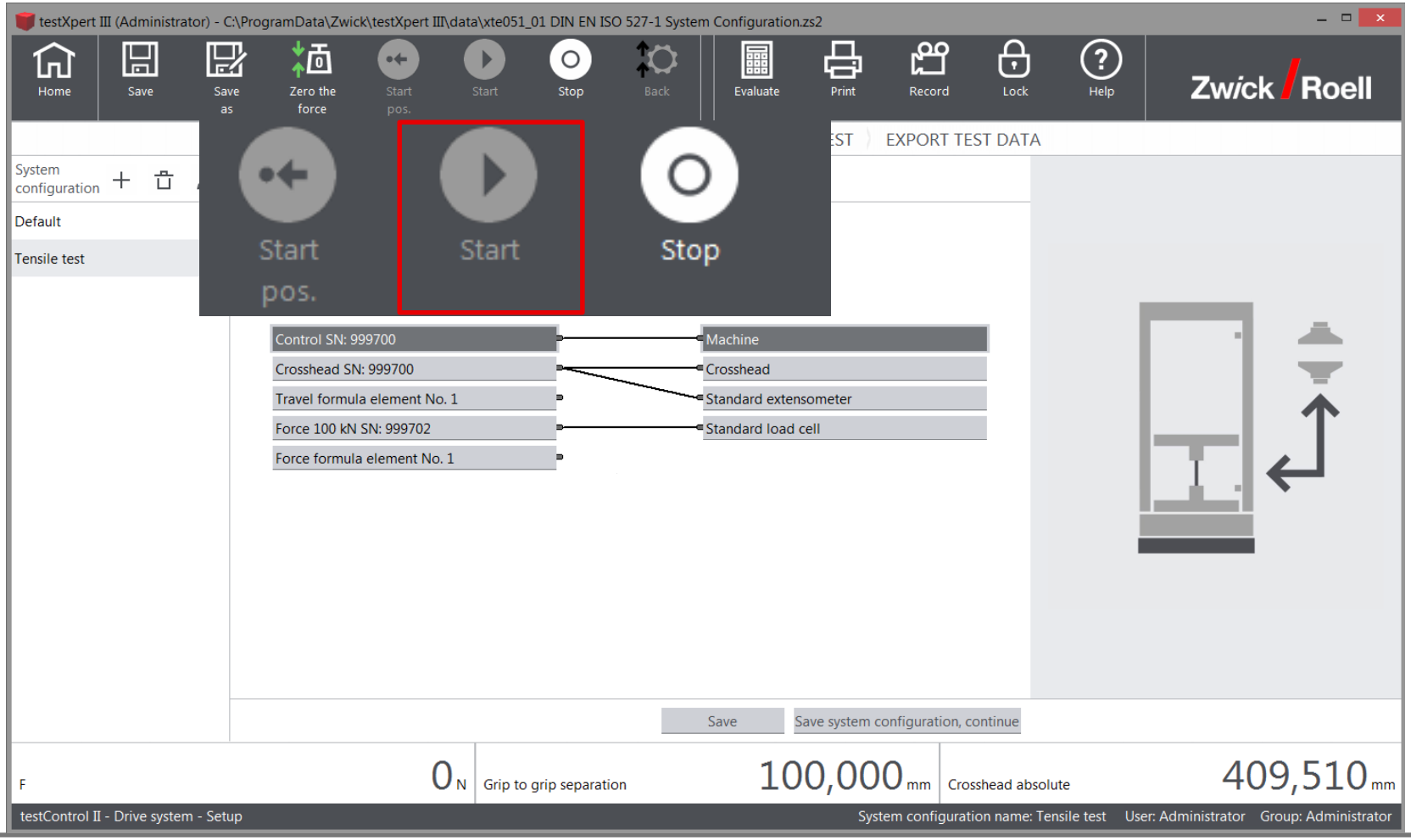
testXpert® III ensures reliable test results

Ensure that you have the maximum safety.



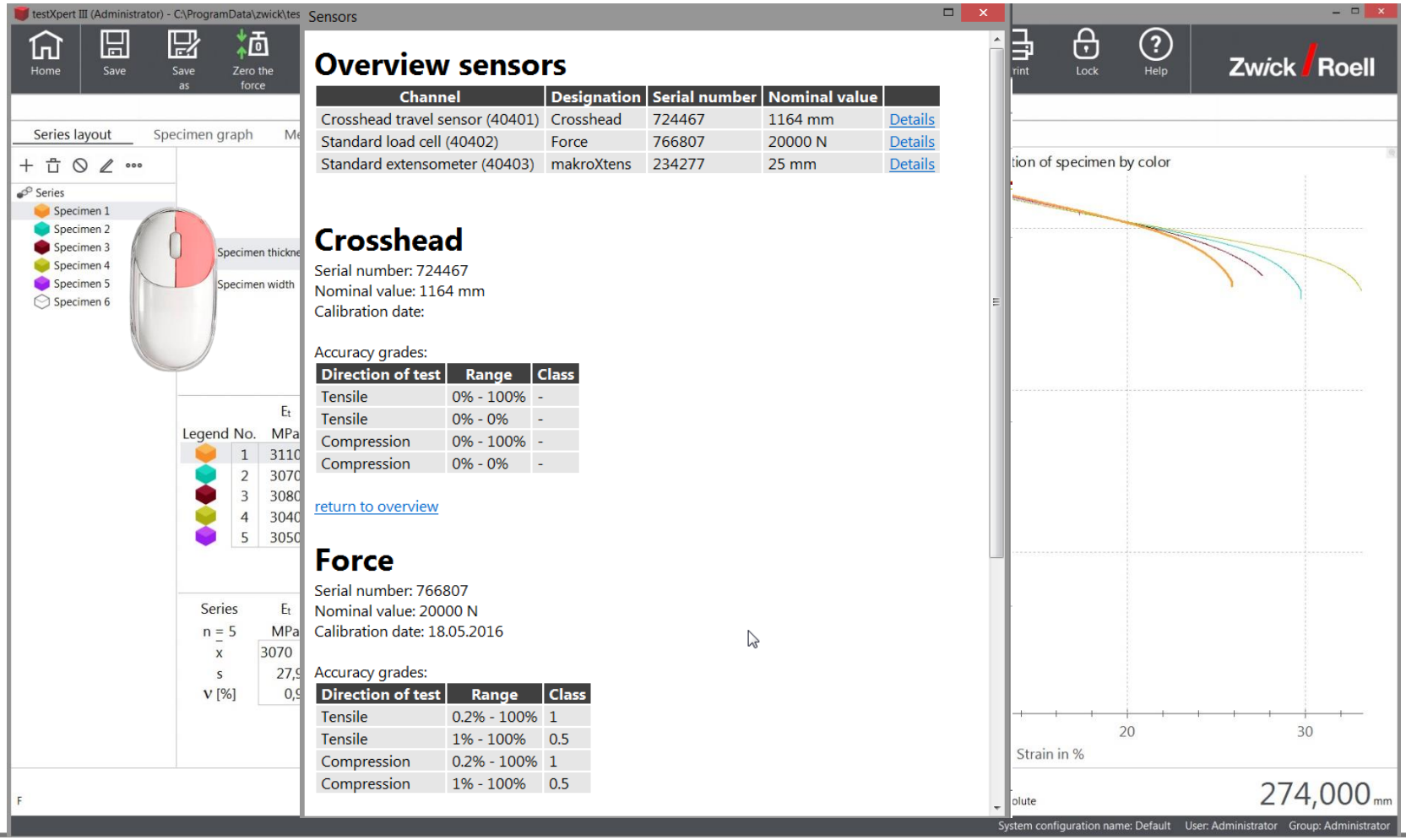
testXpert® III ensures reliable test results

The test can be started only if parameters match the predefined sensors.



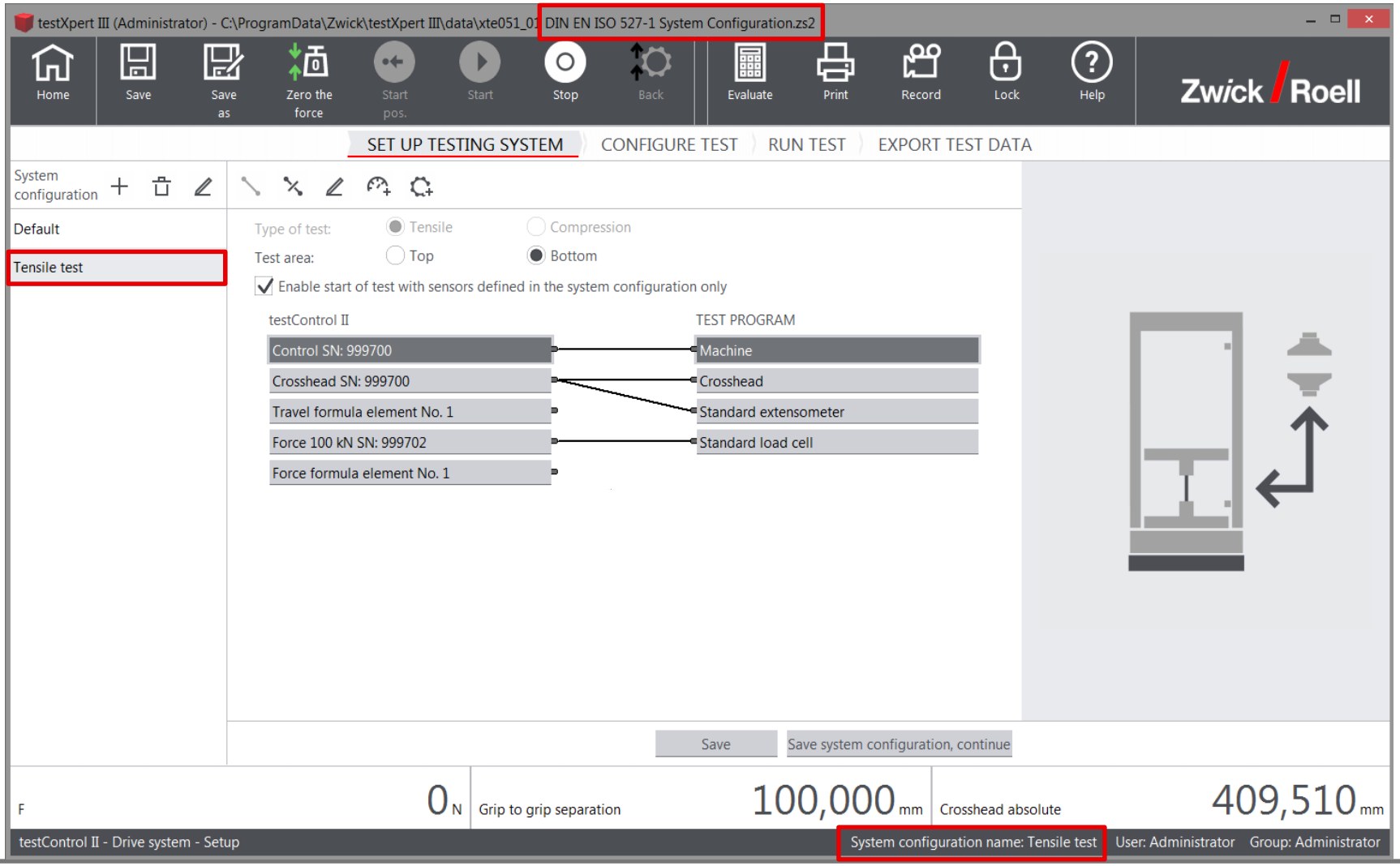
testXpert® III ensures reliable test results

The information about the connected sensors is saved and traceable for each specimen.



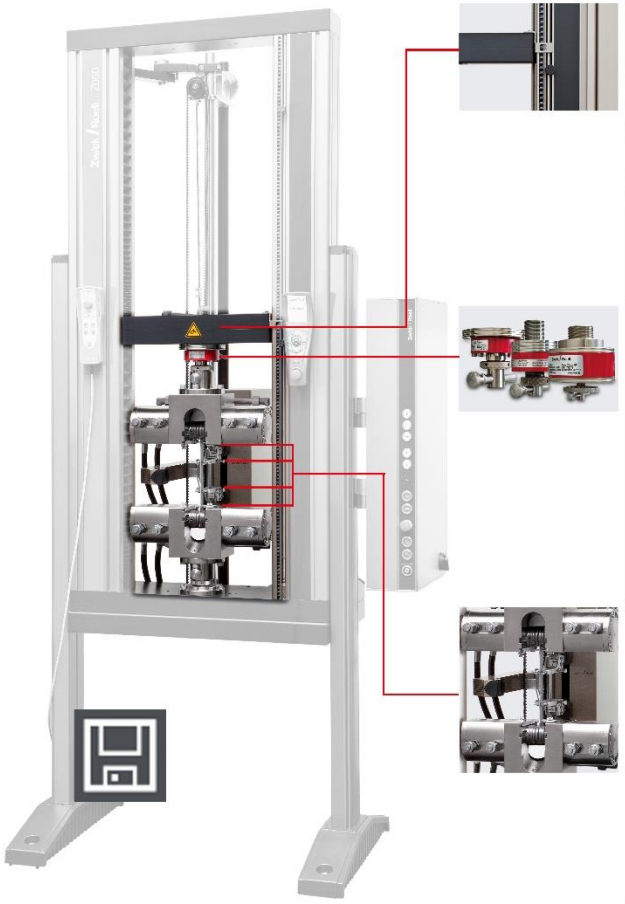
testXpert® III ensures reliable test results

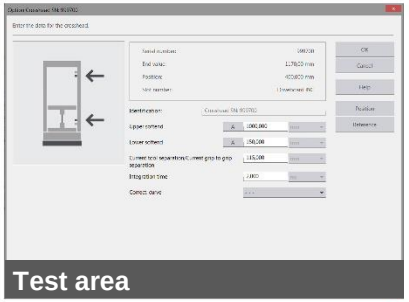
Save the system configuration and link it to the test program.



testXpert® III ensures reliable test results

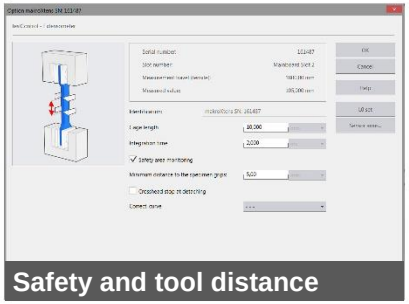
testXpert III always knows how, where and with what the test is to be performed and offers maximum safety for the user and testing system.



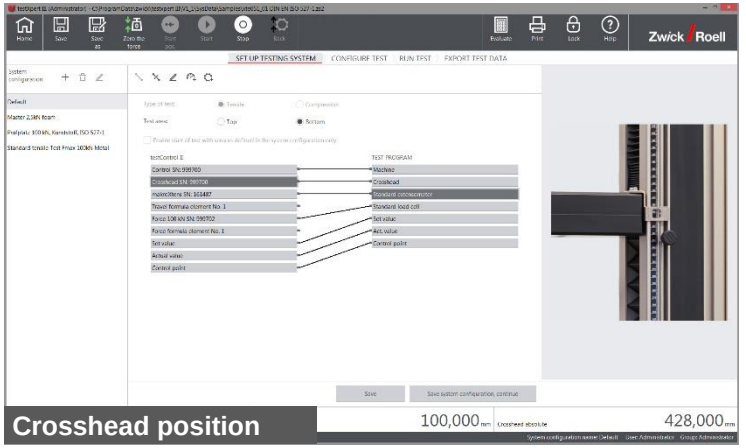


Test area

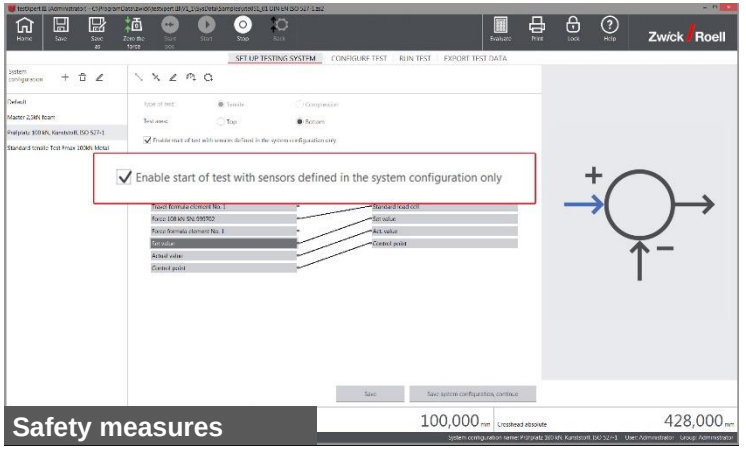
Selector sensor limits



Safety and tool distance



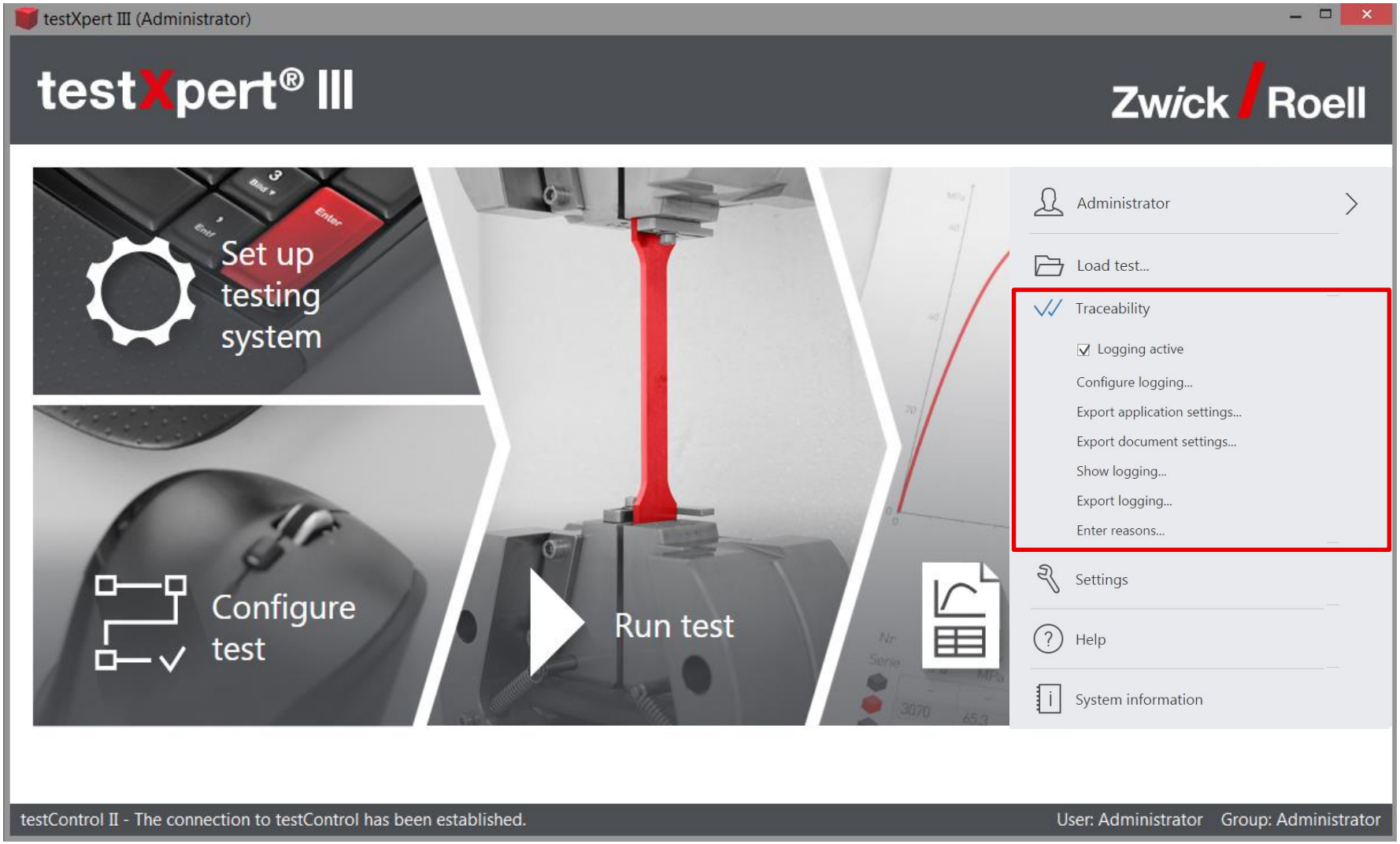
Crosshead position



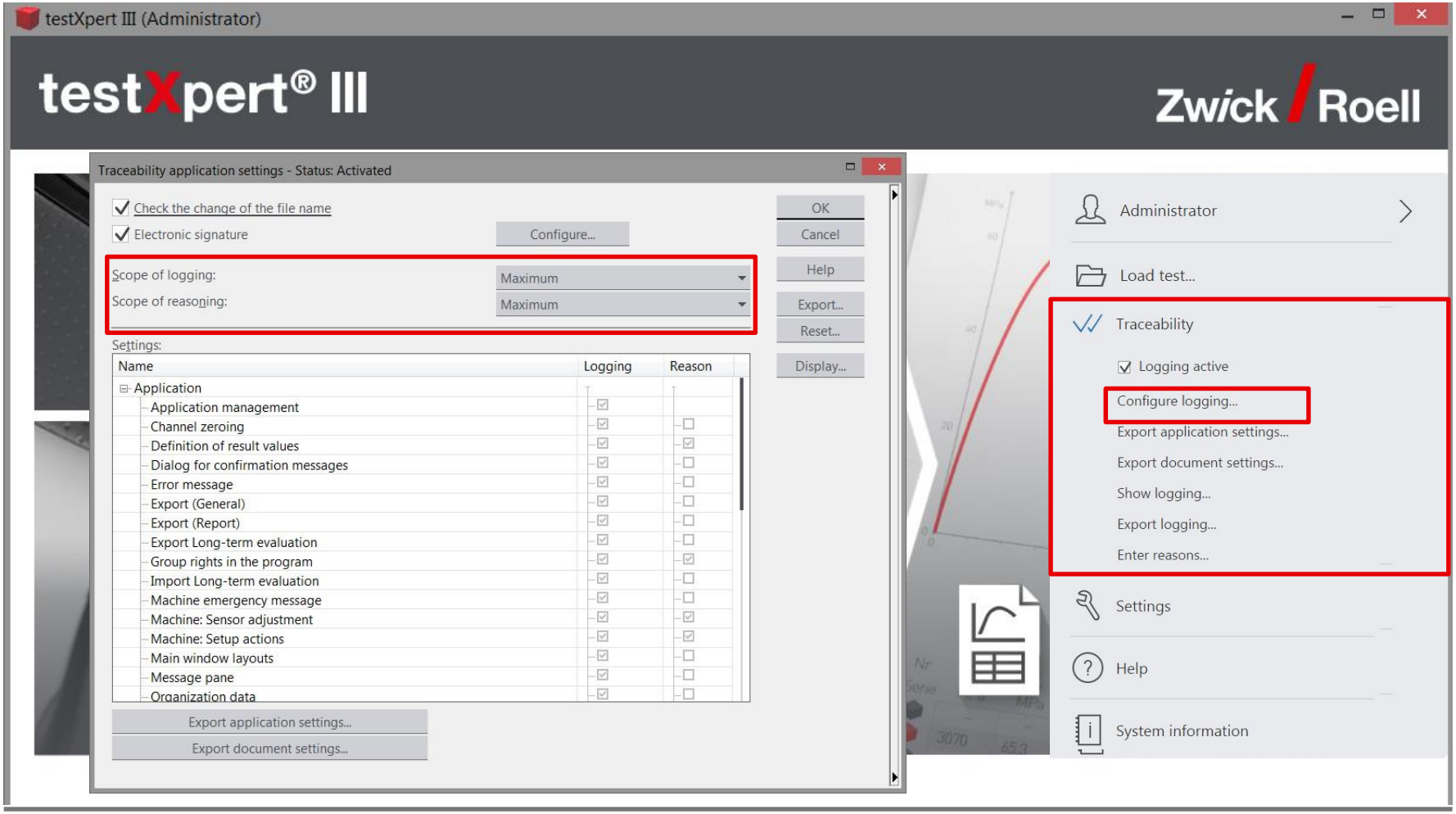
Safety measures

testXpert® III ensures reliable test results

"When does who, do what, why and who is responsible?“

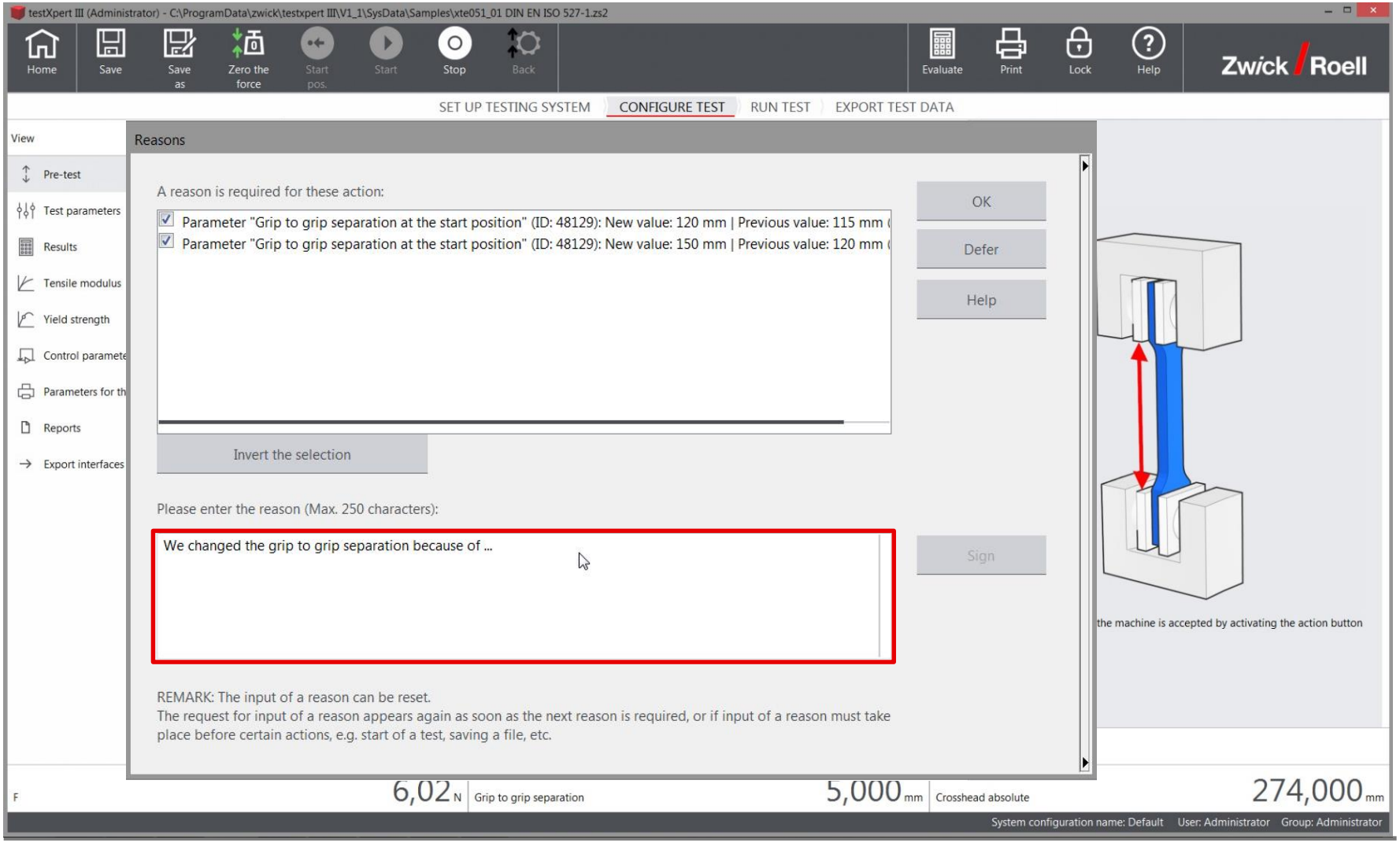


testXpert III logs all test- and system-relevant actions and settings and enables you to trace the reason for a change.



testXpert® III ensures reliable test results

Any changes to the test configuration will be documented.



testXpert® III ensures reliable test results

You can see exactly when who, did what, why and who permitted this action or signed off on it.

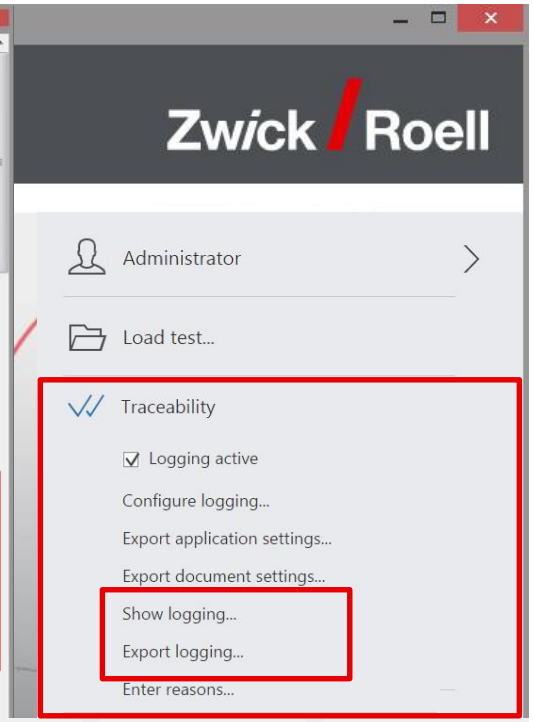
Logging display

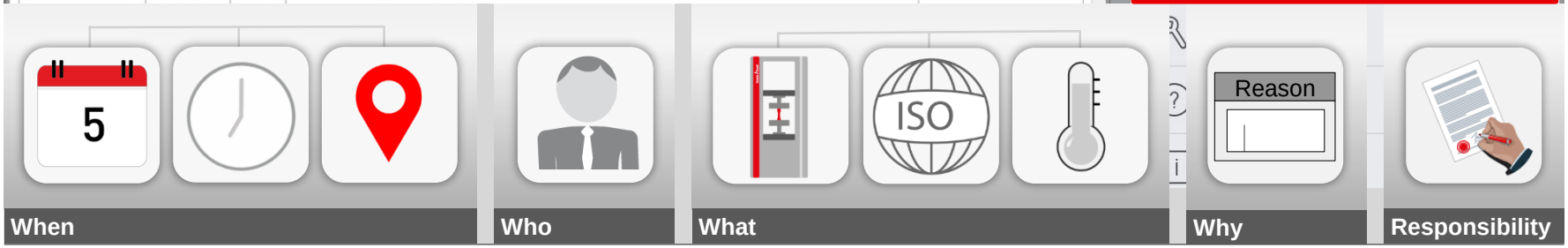
Document logging xte051_01 DIN EN ISO 527-1.zs2

Moment in time of the output: 28.02.2017 16:03:14

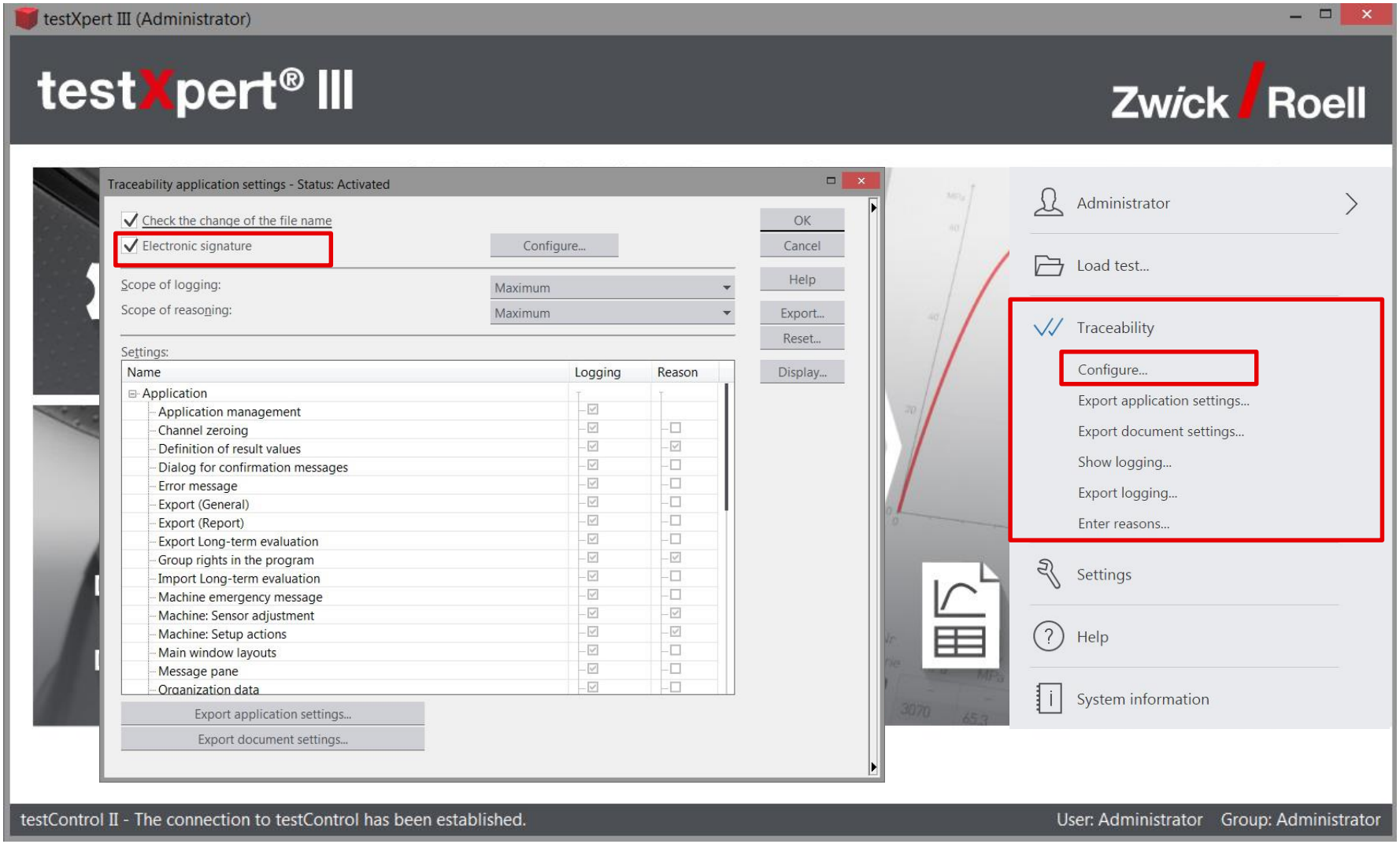
Output by: Administrator

Date	User	Instance	Message	Reason
28.02.2017 09:45:14	Administrator	7968	testXpert file C:\ProgramData\zwick\testxpert III\V1_1\SysData\Samples\xte051_01 DIN EN ISO 527-1.zs2 (Test program & Series not electronically signed) loaded (testXpert V1.1) PC name: ZUE-W-12155 Serial number: 999700 System configuration: Default Organization data configurations: Organization data series protection: Protected	
28.02.2017 11:01:09	Administrator	7968	testXpert error no. 3341: The saved connection in system configuration "Simple tensile test Fmax 100kN" between the machine element Standard load cell and the device with the ID "ForceMeter SN: 999702" could not be established. Because machine element "ForceMeter SN: 999702" is not plugged-in. Please proceed as follows:	
28.02.2017 15:57:24	Administrator	7968	Parameter "Grip to grip separation at the start position" (ID: 48129): New value: 120 mm Previous value: 115 mm Context reference: Series	We changed the grip to grip separation because of ...
28.02.2017 15:57:47	Administrator	7968	Parameter "Grip to grip separation at the start position" (ID: 48129): New value: 150 mm Previous value: 120 mm Context reference: Series	We changed the grip to grip separation because of ...
28.02.2017 16:02:49	Administrator	7968	Parameter dialog "Pre-test" closed	
28.02.2017 16:02:56	Administrator	7968	Parameter dialog "Pre-test" opened	



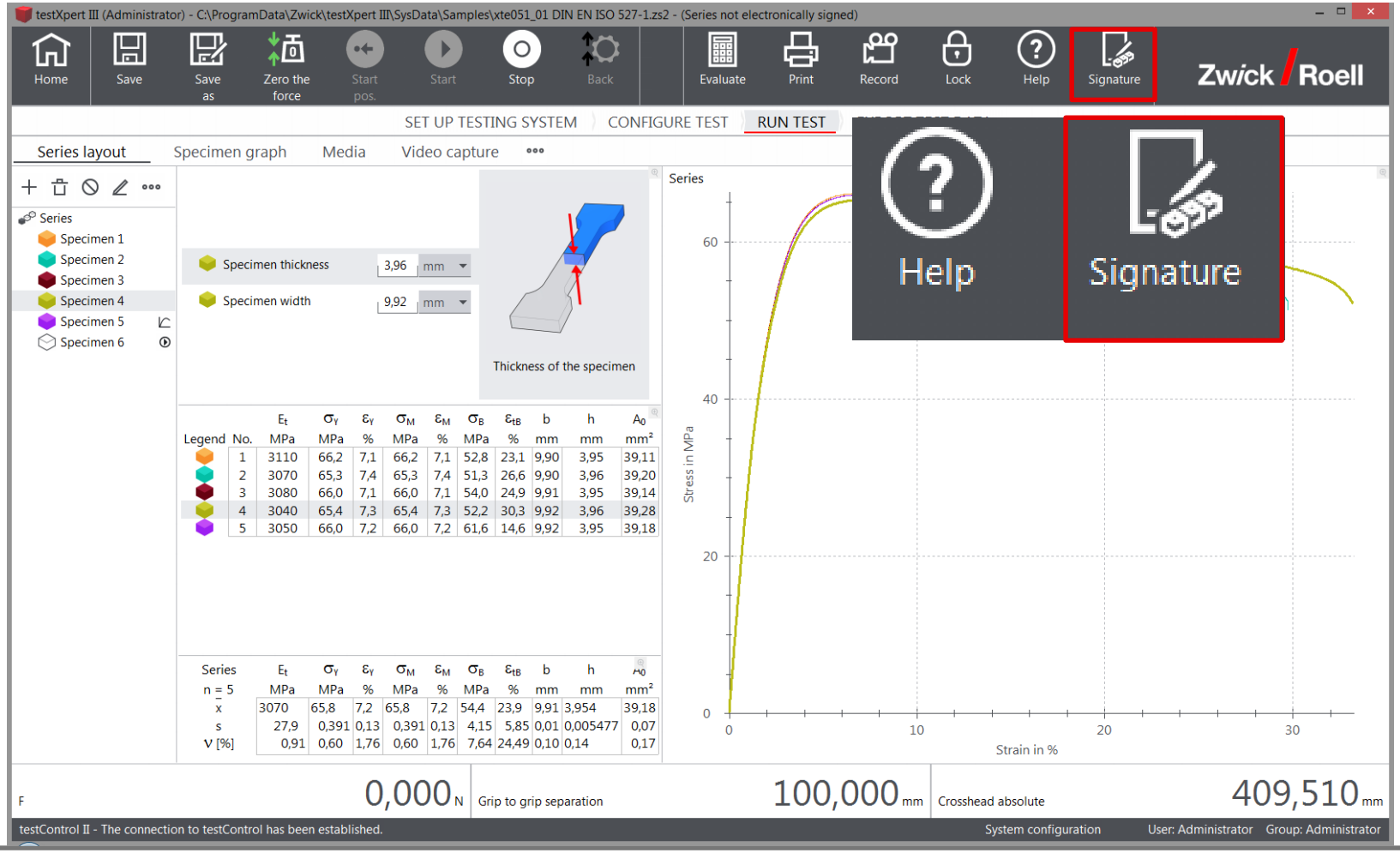


Electronic signature protects from unauthorized changes.



testXpert® III ensures reliable test results

The electronic signature protects the test program from manipulation and can be used as paperless documentation.

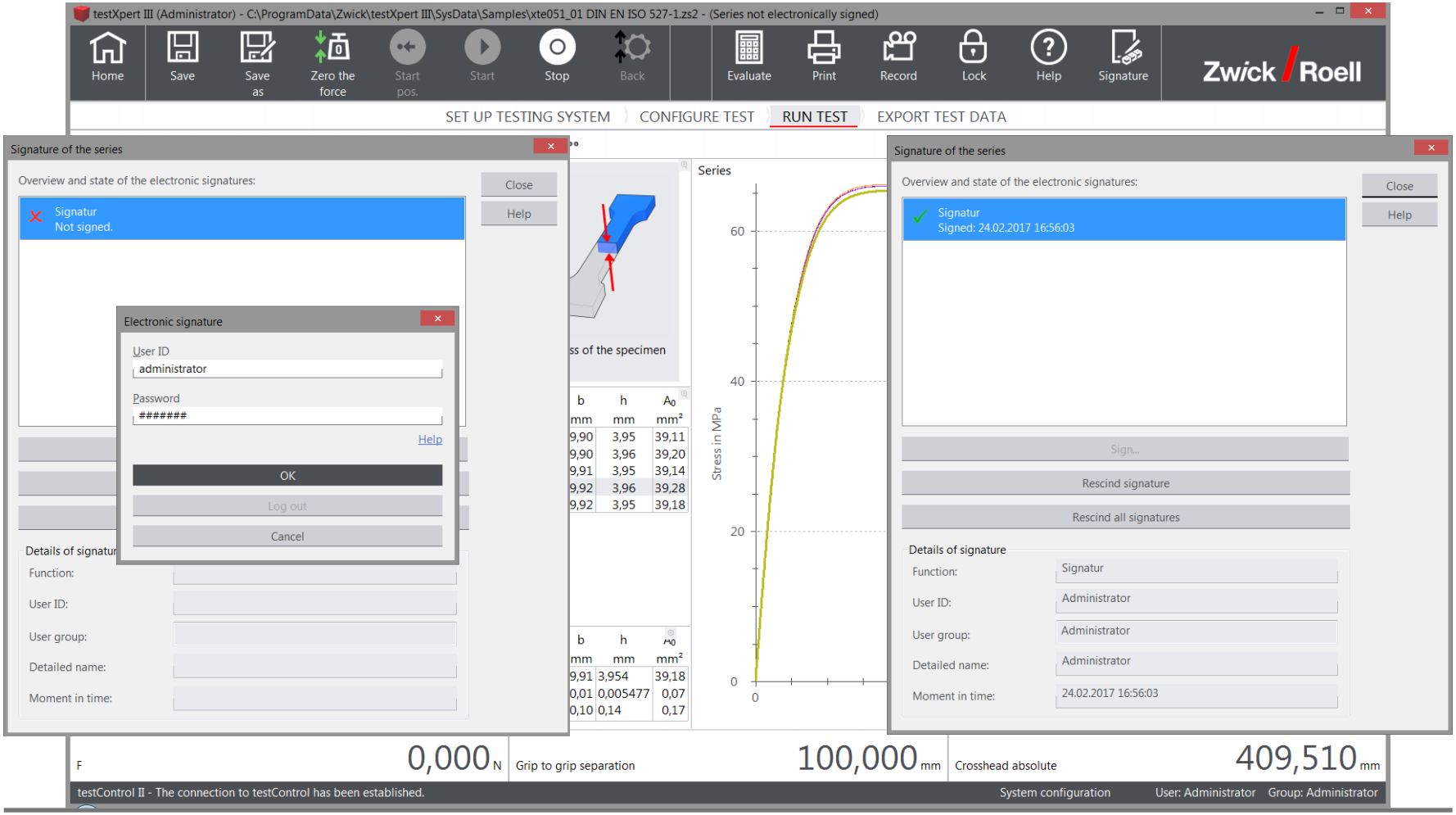


Legend	No.	E_t MPa	σ_Y MPa	ε_Y %	σ_M MPa	ε_M %	σ_B MPa	ε_{tB} %	b mm	h mm	A_0 mm²
	1	3110	66,2	7,1	66,2	7,1	52,8	23,1	9,90	3,95	39,11
	2	3070	65,3	7,4	65,3	7,4	51,3	26,6	9,90	3,96	39,20
	3	3080	66,0	7,1	66,0	7,1	54,0	24,9	9,91	3,95	39,14
	4	3040	65,4	7,3	65,4	7,3	52,2	30,3	9,92	3,96	39,28
	5	3050	66,0	7,2	66,0	7,2	61,6	14,6	9,92	3,95	39,18

Series	E_t	σ_Y	ε_Y	σ_M	ε_M	σ_B	ε_{tB}	b	h	A_0
n = 5	MPa	MPa	%	MPa	%	MPa	%	mm	mm	mm²
$\bar{x}$	3070	65,8	7,2	65,8	7,2	54,4	23,9	9,91	3,954	39,18
s	27,9	0,391	0,13	0,391	0,13	4,15	5,85	0,01	0,005477	0,07
ν [%]	0,91	0,60	1,76	0,60	1,76	7,64	24,49	0,10	0,14	0,17

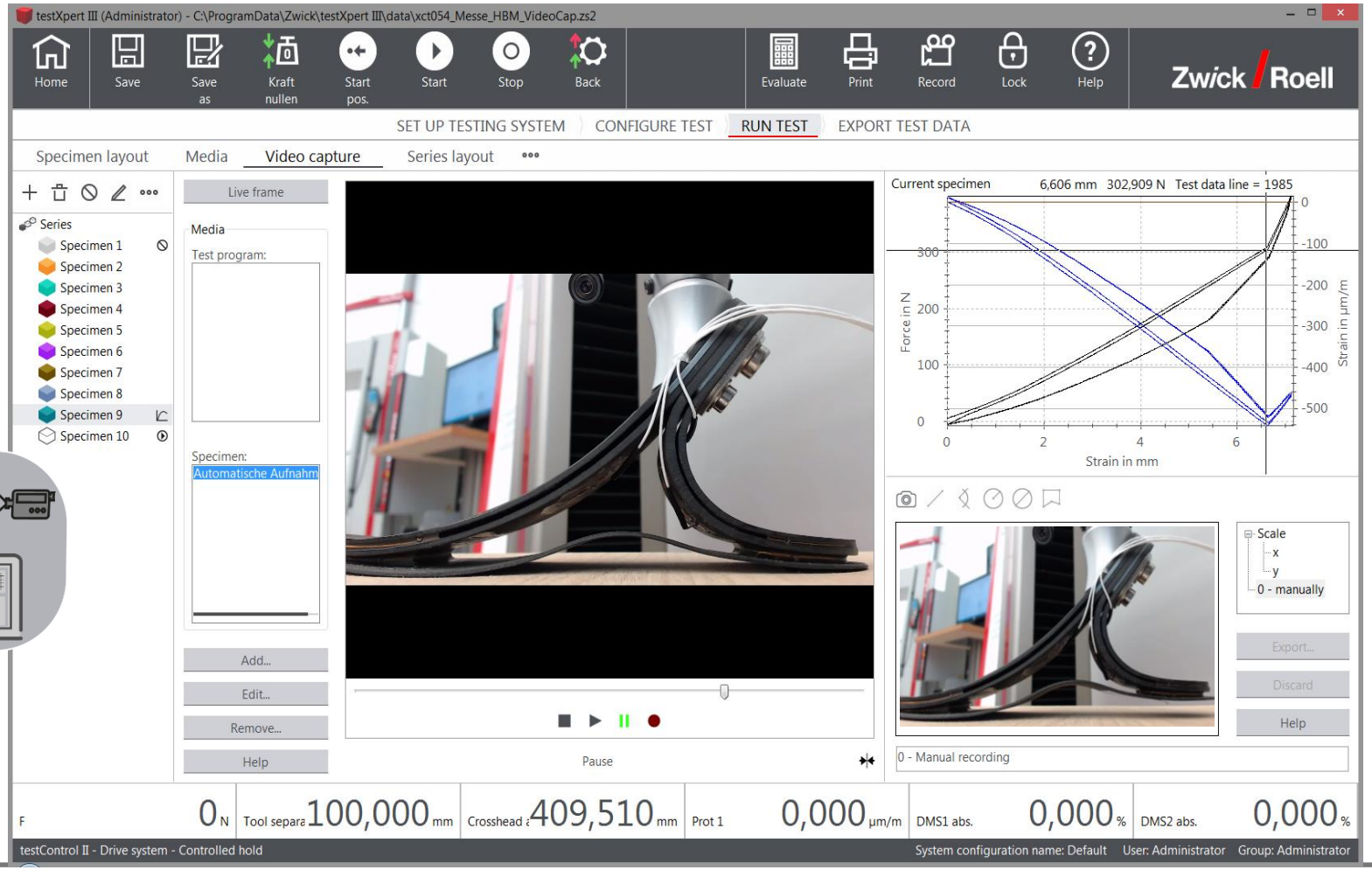
testXpert® III ensures reliable test results

User management allows you to set who or how many people must sign the test program or the report.



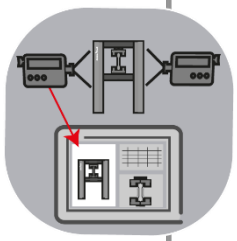
testXpert® III ensures reliable test results

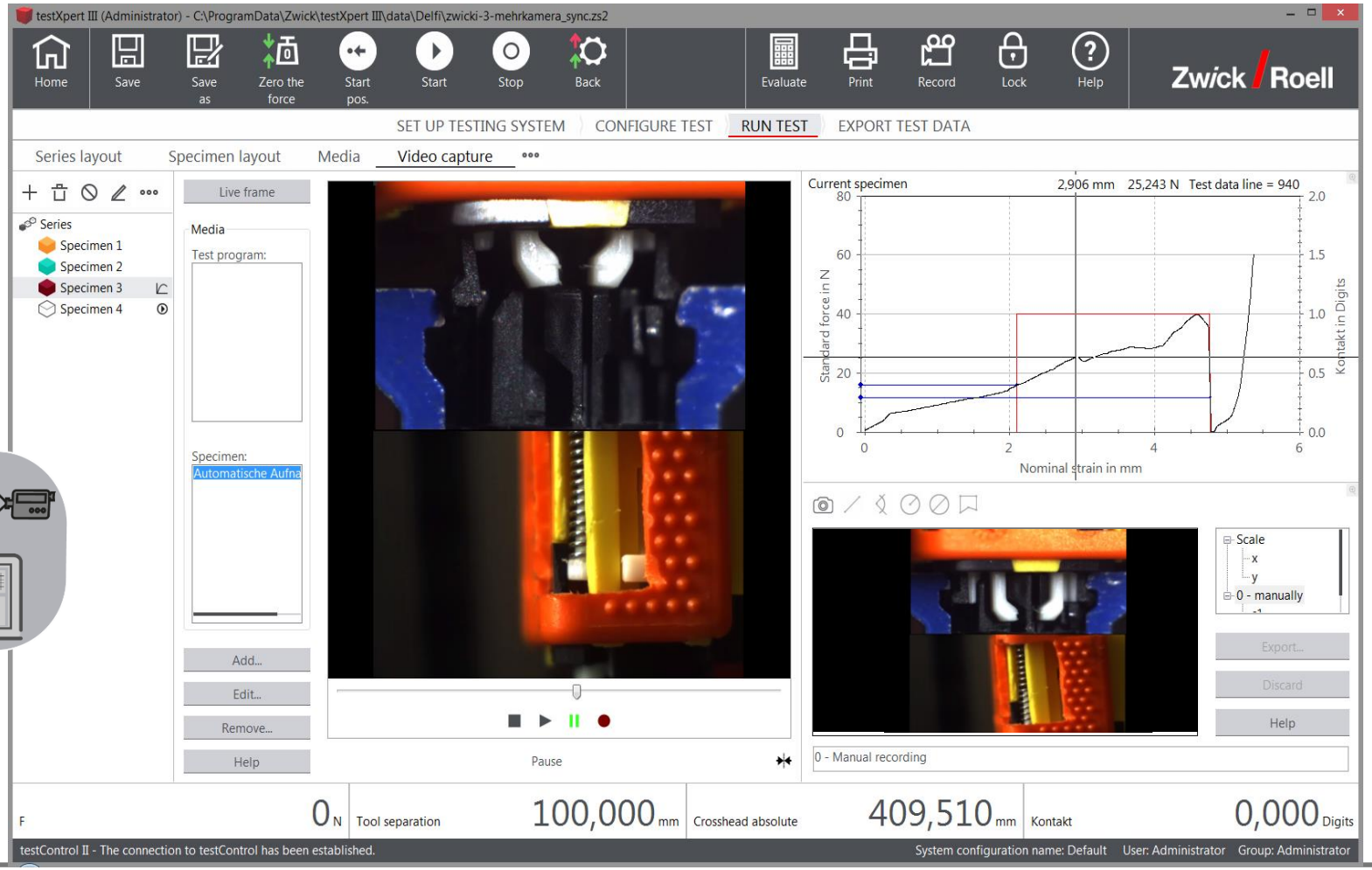
Easy traceability of specimen behavior is assured with videos synchronized exactly to the test – Video Capturing Plus.



testXpert® III ensures reliable test results

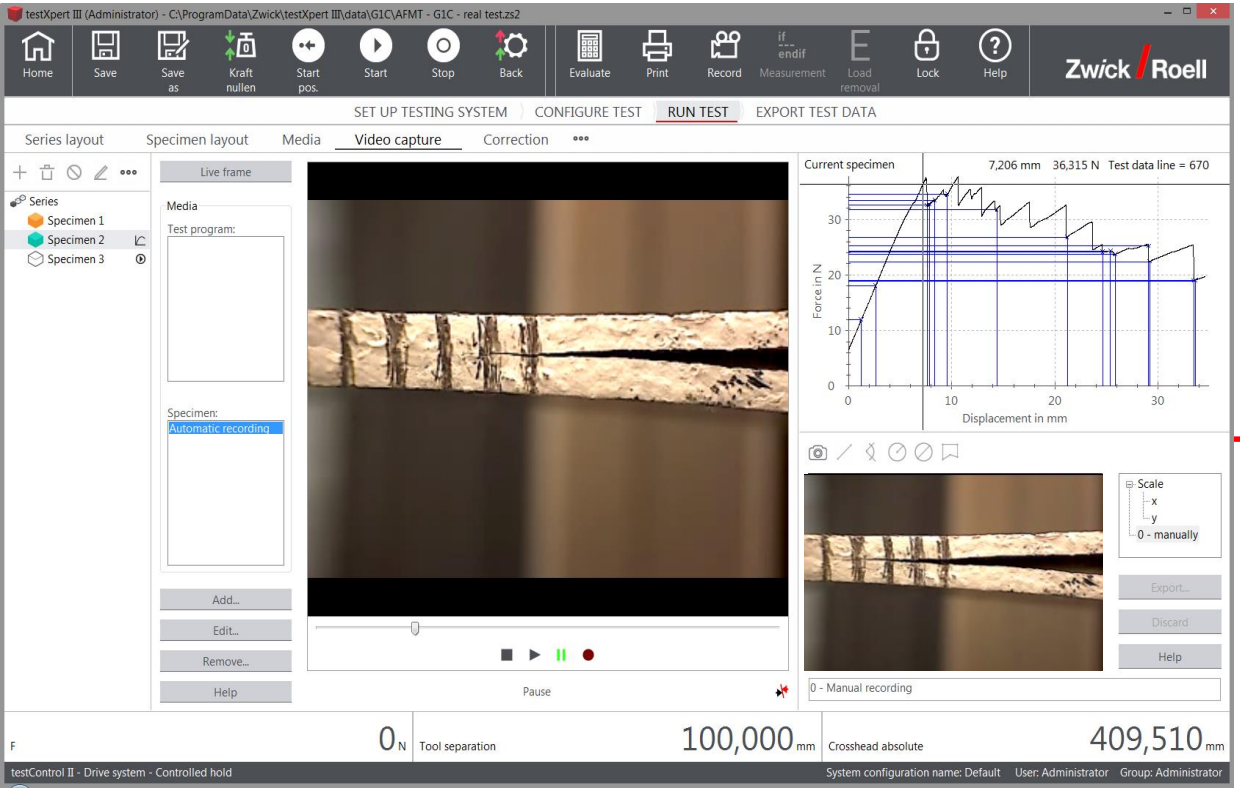
You can visually reconstruct the specimen behavior & generate single frames to view interesting points in the test sequence.

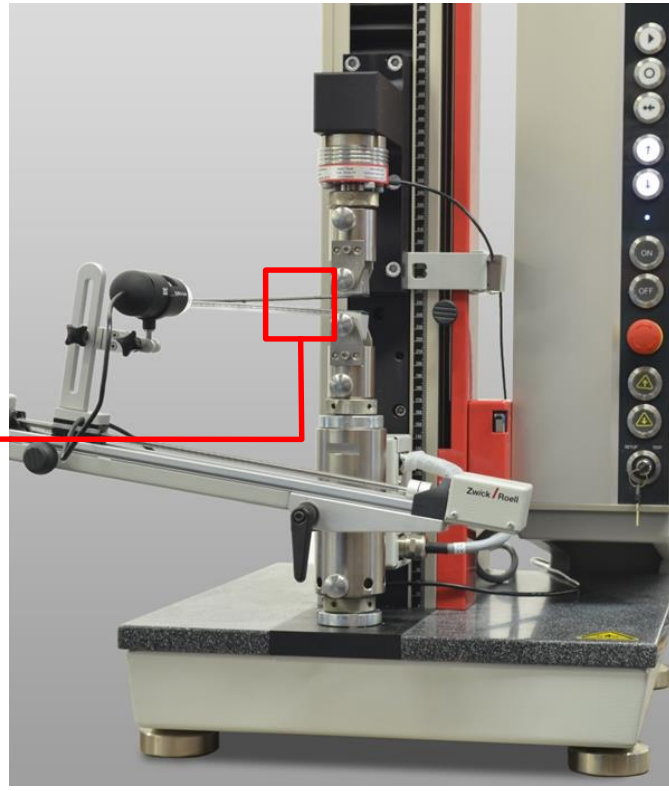




testXpert® III ensures reliable test results

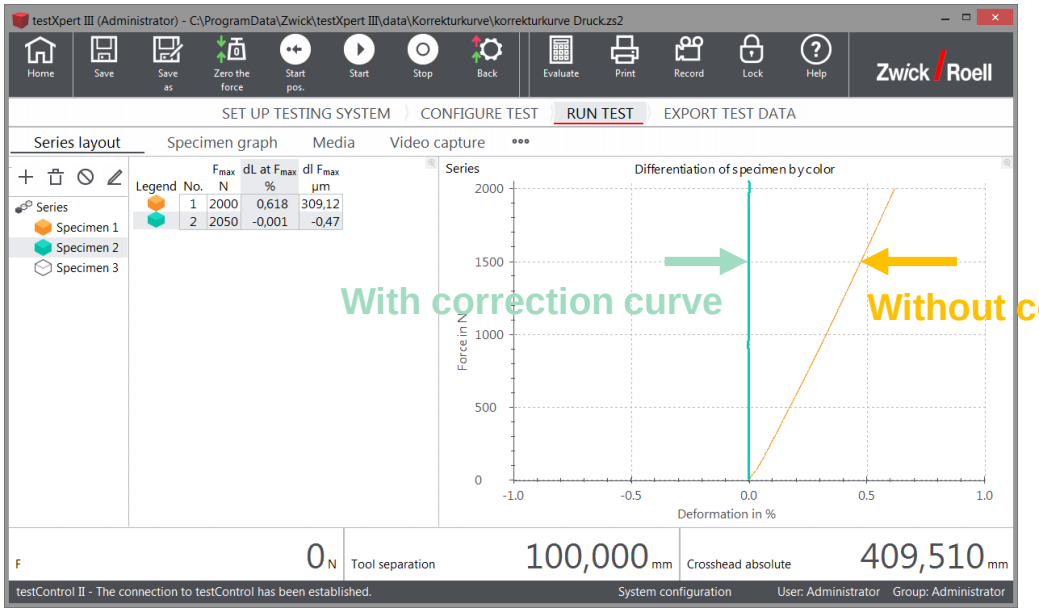
You can trace crack propagation measurements and even reposition the crack points after testing.

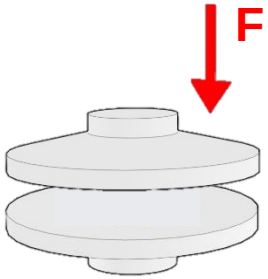




testXpert® III ensures reliable test results

Accurate results for compression tests are ensured by means of automatic real-time correction of machine deformation.

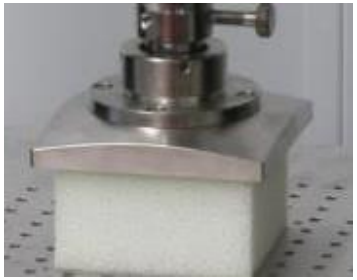


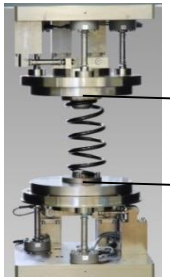


With correction curve

Without correction curve

- Maximum displacement measurement accuracy
- Control is directly through the corrected channel





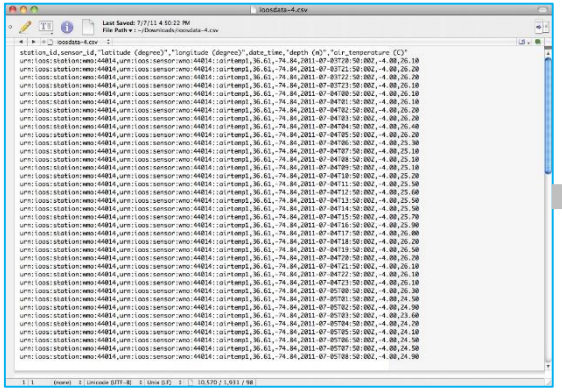
➔ Allowing displacement targets to be attained exactly

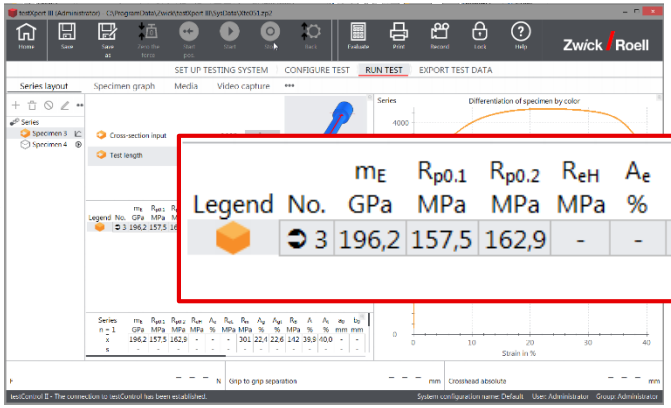
Compare test results with TENSTAND software validation to ensure reproducible test results (Part of ISO 6892-1 2009).

NPL National Physical Laboratory

Dataset	Material	Rp0.1 (MPa)	Rp0.2 (MPa)	ReH (MPa)	ReL (MPa)	Rm (MPa)	Fm (N)	A (%)	At (%)	Ag (%)	Agt (%)	Ae (%)	E (GPa)
1	Nimonic 75, CRM 661	303.4 - 304.5	309.6 - 310.1			764.4	59973	41.2	41.5	30.8	31.2		200.8 -216.5
6	Nimonic 75, CRM 661	300.5 - 301.8	308.0 - 308.6			761.1	59780	41.4	41.7	31.4	31.8		182.7 - 195.8
10	13%Mn Steel	334.5 - 334.9	337.1 - 337.2			937.0	72667	51.4	51.9	49.8	50.4		180.6 - 184.0
13	S355 Structural steel			479.4	431.8	567.2	44503	29.4	29.5	14.5	14.7	1.98 - 2.10	228.8 - 221.0
17	316L Stainless Steel	244.7 - 245.2	261.0 - 261.2			575.7	45278	51.1	51.3	38.3	38.6		189.8 - 202.3
22	Tin Coated packaging steel	525.6 - 530.6	562.5 - 564.6			596.7	2369	0.9	1.2	0.6	0.9		198.7 - 207.3
30	Sheet steel - DX56	157.2 - 157.6	162.7 - 162.9			301.5	4272	39.9 - 40.1	40.1	22.5	22.6		195.0 - 207.4
38	Aluminium Sheet - hard AA5182	385.2 - 386.8	396.4 - 397.1			434.3	2007	4.7	5.4	4.3	4.9		68.1 - 69.3
42	Aluminium Sheet - soft AA1050	26.48 - 26.55	30.01 - 30.05			83.6	1210	44.5	44.6	28.6	28.7		68.7 - 72.0
46	Aluminium Sheet -soft AA5182	133.4 - 133.9	134.5 - 134.8			284.6	8420	22.6 - 22.7	23.2	20.5	20.9		68.7 - 70.0
50	Sheet steel - DX56	158.6 - 158.7	163.9 - 164.0			303.9	2665	43.4 - 43.9	44.2	23.9	24.1		162.2 - 165.3
53	Sheet steel - ZStE			270.1	228.7	318.9	3782	40.3 - 40.8	40.8	18.9	19.1	1.74 - 1.80	198.7 - 208.9
57	Synthetic Digital Curve - zero noise	432.4	434.3			738.5	58000	50.0	50.2	39.6	40.0		207.5 - 208.0
61	Synthetic Digital Curve - 0.5% noise	431.8 - 434.1	438.1 - 441.6			748.1	58754	50.0	50.2	39.2	39.6		201.6 - 211.5
63	Synthetic Digital Curve - 1% noise	429.6 - 432.7	446.5 - 448.2			759.3	59632	50.0	50.2	37.3	37.7		203.0 - 211.6

Check of results

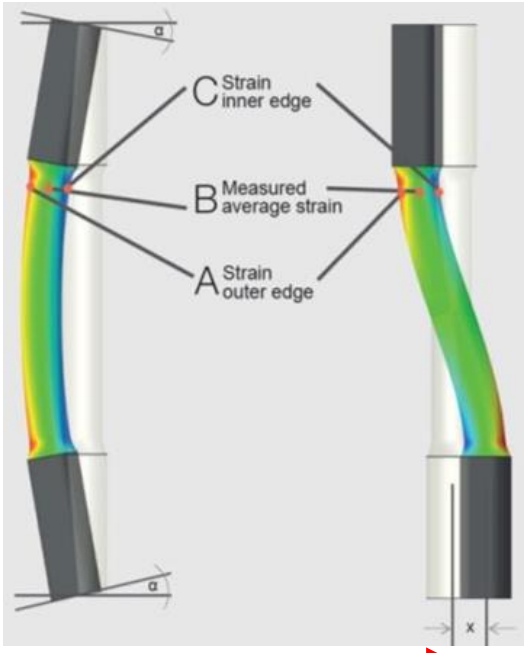


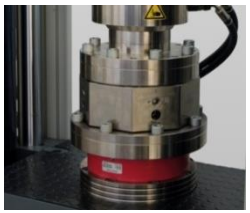


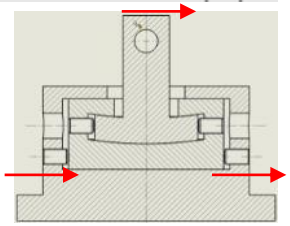
Legend	No.	mE GPa	Rp0.1 MPa	Rp0.2 MPa	ReH MPa	Ae %	ReL MPa	Rm MPa	Ag %	Agt %	RB MPa	A %	At %
	3	196,2	157,5	162,9	-	-	-	301	22,4	22,6	142	39,9	40,0

Internationally recognized raw data sets and internationally recognized tensile test results ensure reproducibility in the calculation of characteristic values.

In the case of brittle specimens, or in creep and fatigue tests, the exact alignment of the load string is critical to obtaining accurate test results.

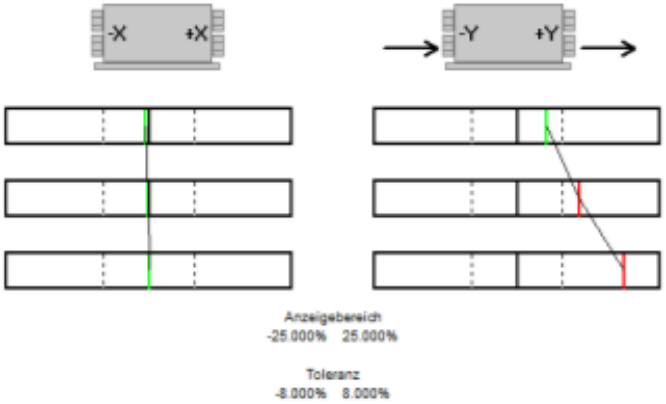


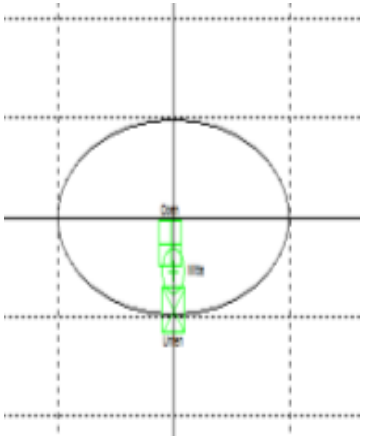




Correct specimen alignment

- Determination of angular error and offset error using a strain-gaged alignment transducer
- Mechanical correction via alignment unit + testxpert III software





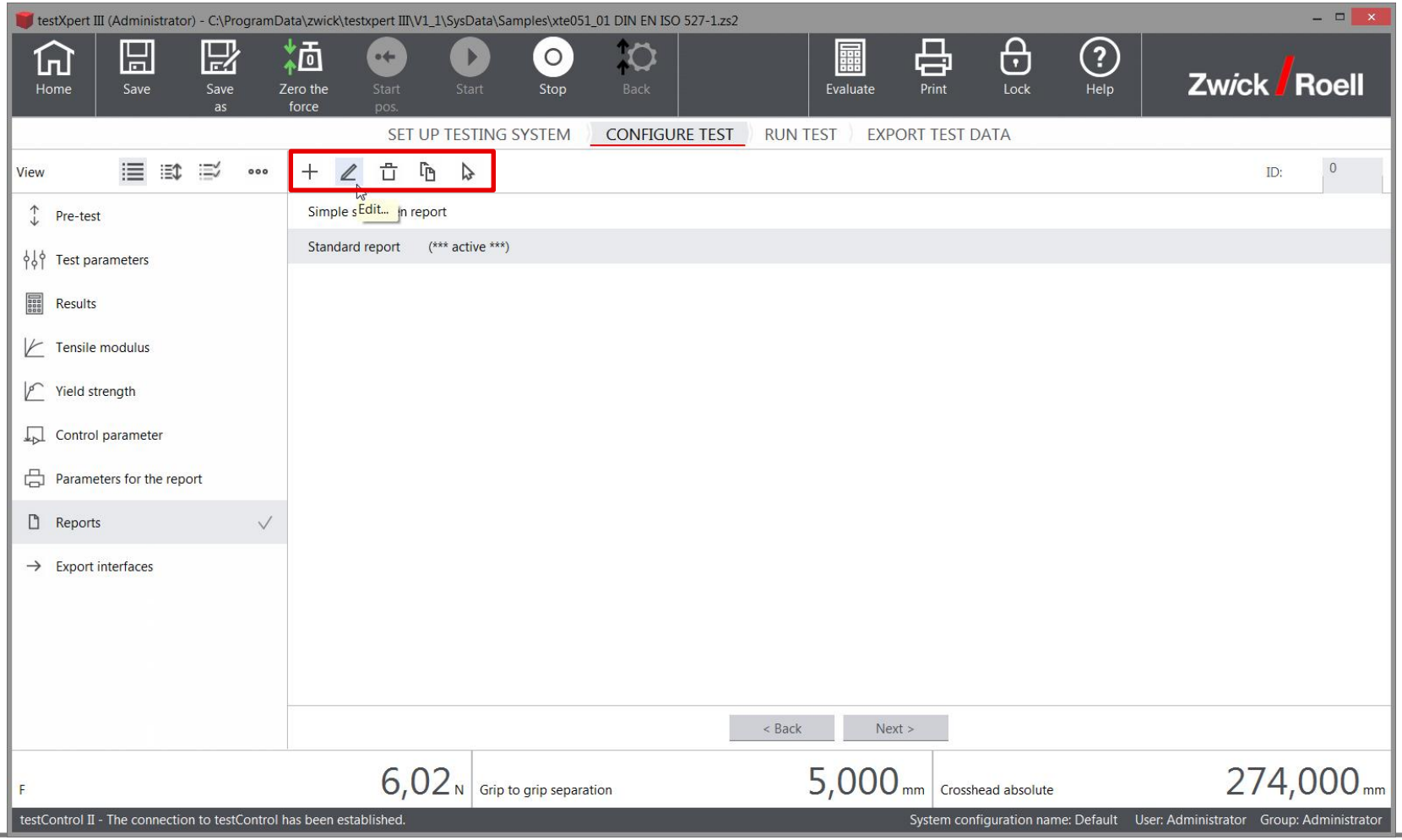
testXpert® III

…can be integrated perfectly

company’s IT landscape?

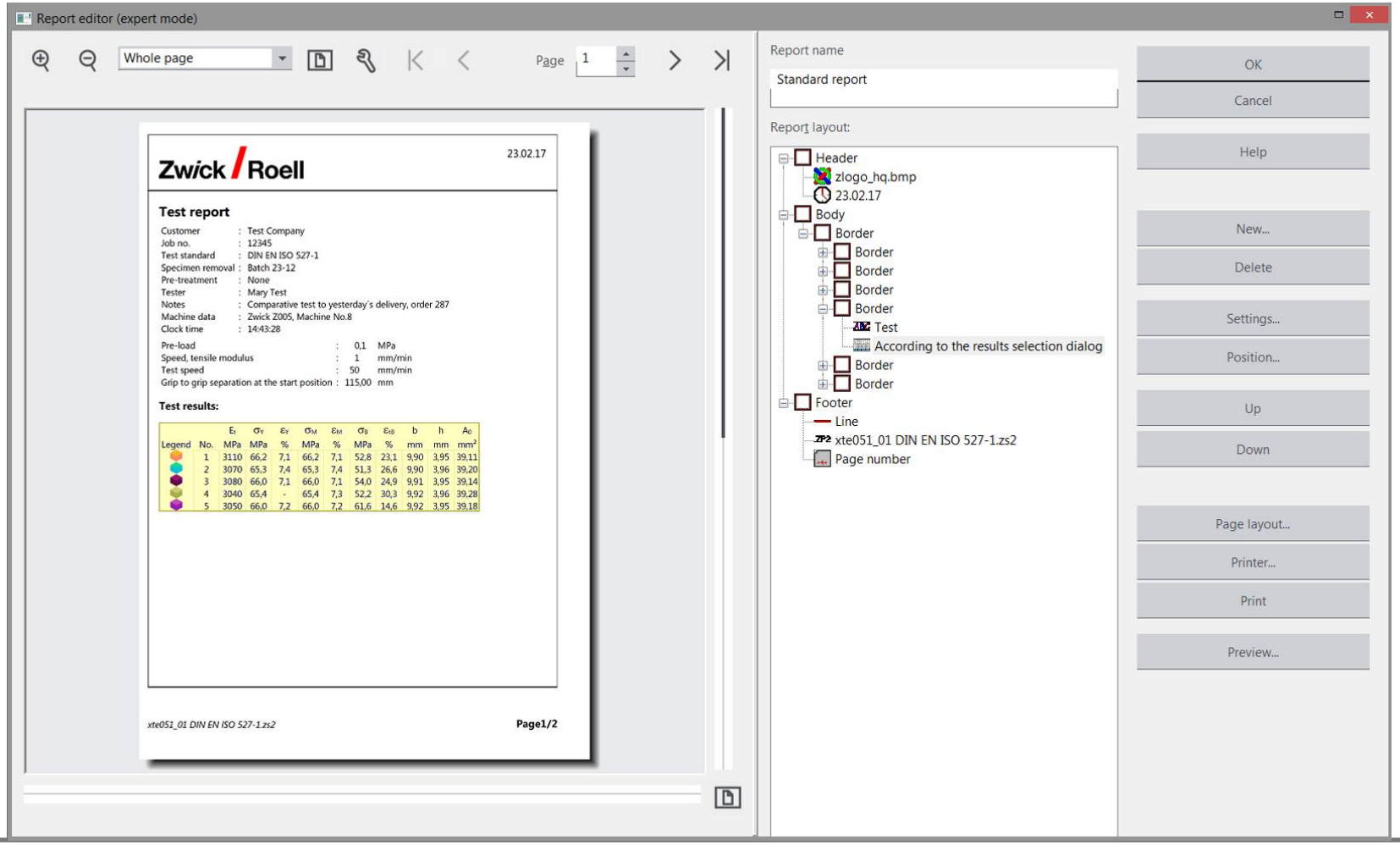
testXpert® III can be integrated perfectly

Quickly edit and export test reports as needed and create reports to individual requirements and specifications.



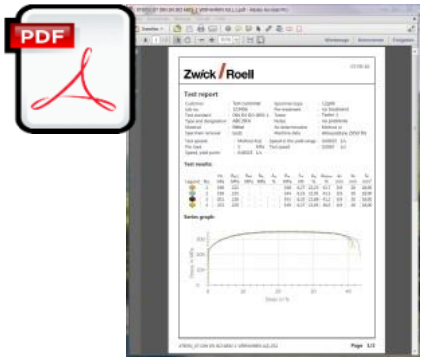
testXpert® III can be integrated perfectly

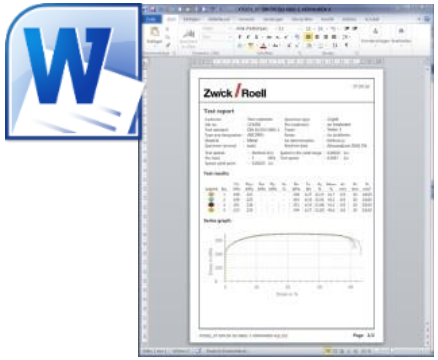
Set your requirements using the Structure Editor's wide range of functions and testXpert III will automatically export the data.

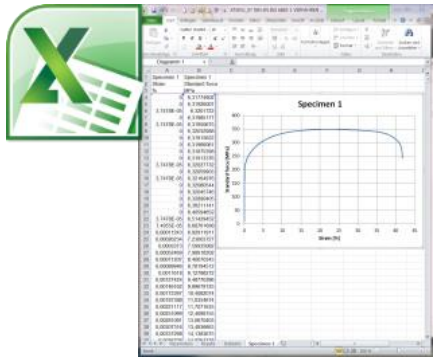


testXpert® III can be integrated perfectly

Export all required test data, to common applications or to your own customized solutions.







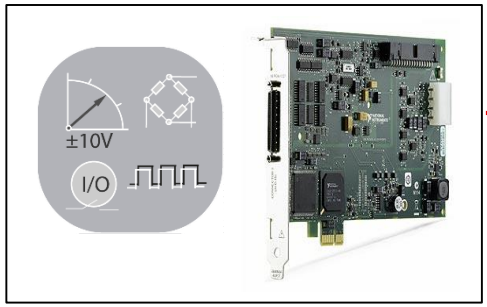
ASCII

testXpert® III can be integrated perfectly

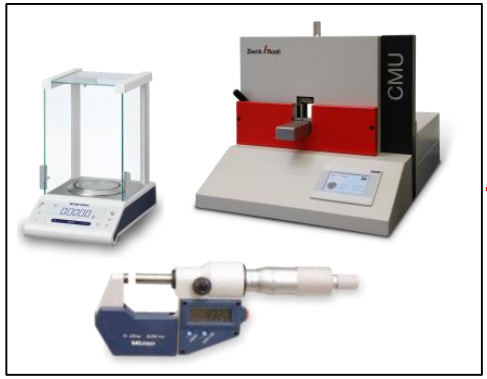
Zwick / Roell

testXpert III integrates data from external sensors, I/Os and external devices or measurement amplifiers.

I/O cards & sensors



External devices



testXpert® III

HBM measurement amplifiers

testXpert® III can be integrated perfectly

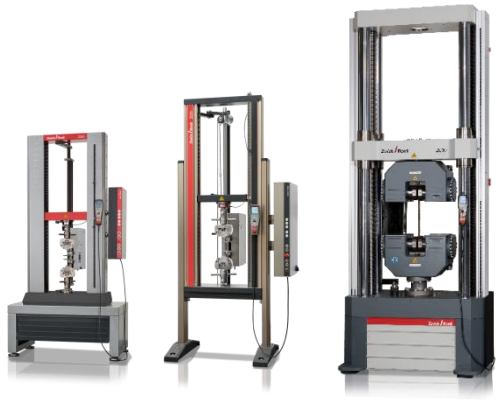
Zwick / Roell

testXpert III reduces input errors, increases efficiency in the test lab, and communicates with every IT system through automated importing and exporting.

Databases/ERP systems

Read in order, e.g. via barcode

testXpert® III

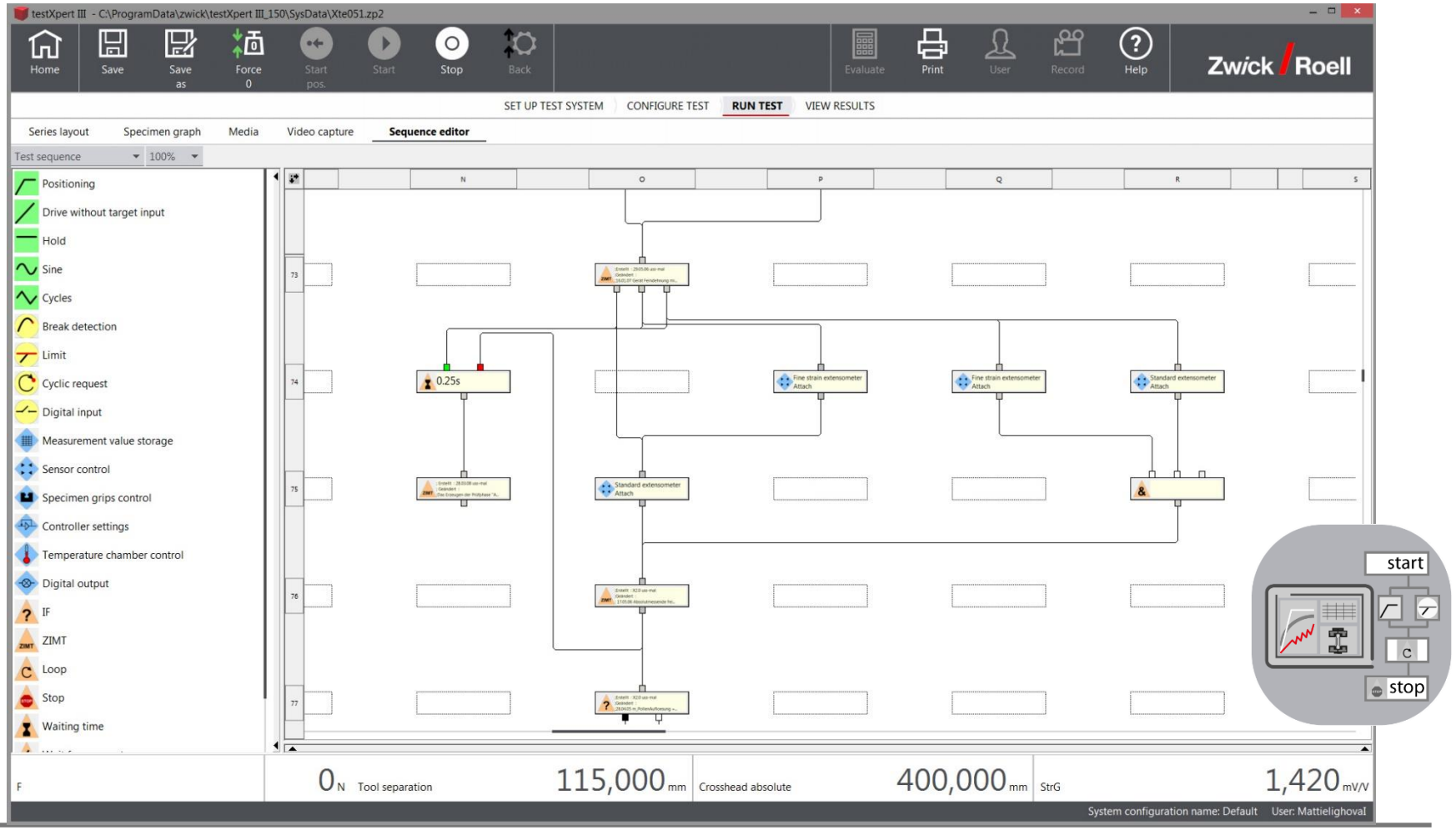


testXpert® III

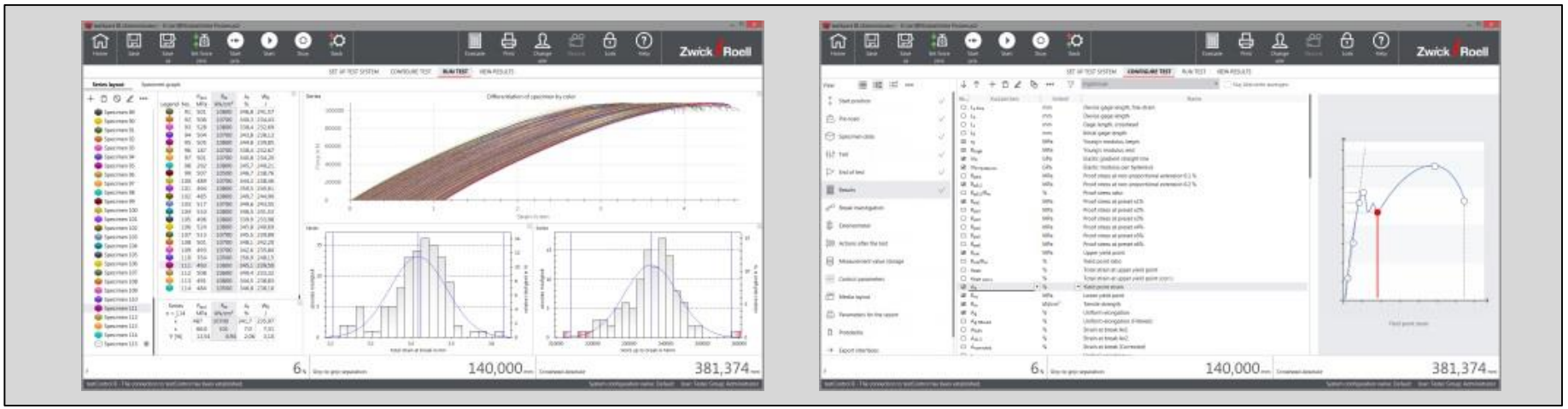
…is flexible

to individual and future requirements?

Create test sequences of any type with all the flexibility you need with the Graphical Sequence Editor.



Unique test and evaluation requirements are possible with testXpert III: we get started where the others leave off!



testXpert® III

…is the safest testing system

on overall safety?

testXpert® III is the safest testing system

Zwick / Roell

We make no compromises with ZwickRoell safety technology – we use only high-quality, industry-proven safety components in all products.

Mechanics

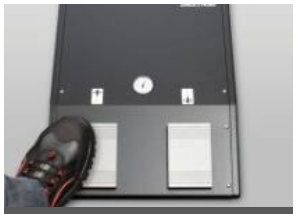

Safety doors


Safety housing


Safety devices


Safety enclosures with access control


Safety devices with interlocks


Pneumatic safety control unit

Electronics


testControl II


Emergency STOP


2-handed operation


Safety interlocks

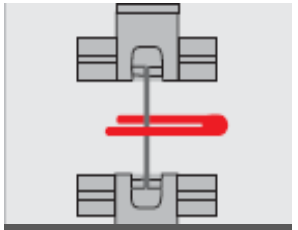

Limit switches

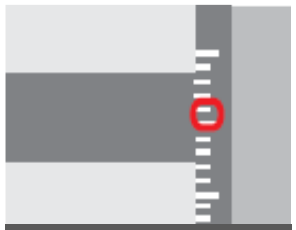

Mobile emergency STOP

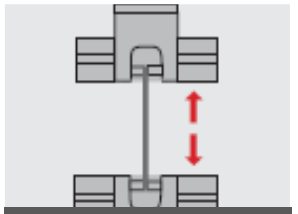
Software

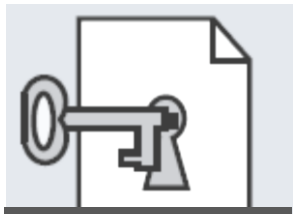

Safe operation

Traceability


Safety area monitoring


Crosshead limits for test area


Fixture separation


User management

testXpert® III

Testing Software

Thank you for your attention!
Any questions?