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RESOTECH DUST CHAMBER

Professional Manufacturer of Test Equipment

MAKE : RESOTECH

MODEL NO. : RESOTECH-011

MANUFACTURERS & SUPPLERS

SPECIAL PURPOSE MACHINE, MATERIAL TESTING MACHINE, LEAKAGE TESTING MACHINE, PACKIGING TESTING MACHINE, ENVIRONMENTAL TEST CHAMBER, ASSY. LINE EQUIPMENT, SOLUTION FOR ELECTRONIC AUTOMATION AND PRODUCT DEVELOPMENT, COMPUTERIZED CONTROL MACHINE , PLC HMI SCADA VISUAL BASIC SOFTWARE DEVELOPMENT SOLUTION AND OTHER SERVICES.

The mechanical properties of materials are determined by performing carefully designed laboratory experiments that replicate as nearly as possible the service conditions. In the real life, there are many factors involved in the nature in which loads are applied on a material. The following are some common examples of how these loads might be applied: UNIVERSAL, compressive and shear, just to name a few. These properties are important in materials selections for mechanical design.

Sand Dust Test Chamber | Dust Test Chamber

The sand and dust test chamber is suitable for testing the sealing performance of the shell of the product. It is mainly used for the test of the two grades of IP5X and IP6X specified in the protection standard of the shell. It is mainly to simulate sandstorm weather caused damage to lockset, auto parts, seals, electrical instruments and other products. Through the test, add some protective screening or sand and dust measures in the general equipment installation and application. Improve the product's ability to resist and protect dust.

Products to be tested for dustproof performance and IP dustproof grade: Communication products, Automobile parts (such as automobile rearview mirror, automobile acoustics, automobile electronics, automobile lighting, automobile lamps, motorcycle lamps, motorcycle rearview mirror), Outdoor lighting and signal devices.

The dust test chamber can effectively help users to evaluate the sand and dust resistance of the sample, and the ability to resist the impact of dust that may block the opening, infiltration cracks, gaps, bearings and joints, and it is not affected by the wear or blockage of large sand particles with sharp edges reduce the performance, efficiency, reliability and maintainability. Sand and dust test chamber is applicable for sand and dust test of various auto parts, including car lamp, instrument, electrical dust cover, steering system, door lock, etc.

Dust Protected and Dust Tight (IP5X & IP6X)

Ingress protection testing tests the level of protection an enclosure provides against intrusions. Intrusions can mean water or solids. The smallest solid tested is dust ingress testing. Dust testing labs must use calibrated material to complete the IP Code dust testing.

The degree of dust protection is specified by the IP Code. The Ingress Protection IP testing provides two numbers. The first number is the protection from solids. The second number is the protection from liquids.

The IP Codes derived from dust testing are IP5X and IP6X. The X could be zero through nine depending on the enclosure's water resistance. If an enclosure is dust protected, the first number will always be a 5. If a case is dust tight, the first number will always be a 6.

IP5X Dust Protected Enclosure

IEC 60529 provides the IP5X meaning and is considered the IP5X standard. A dust protected enclosure is an enclosure where the ingress of dust is not entirely prevented. The IP rating for these enclosures are IP 5X dust protected.

It is important to note that the IP5X test procedure requires additional clarification. To be considered IP 5X test protected, dust must not enter in a sufficient quantity to interfere with the satisfactory operation of the equipment. Therefore, the IP5X dust test requires an assessment of the equipment operations to claim IP5X protection.

IP6X Dust Tight

A dust tight enclosure is defined as having a degree of protection where no ingress of dust. The ingress protection ratings for these enclosures are IP 6X dust tight. Unlike IP 5X dust testing, the IP 6X test requires no additional assessment as the presence of any dust in the enclosure is considered unacceptable.

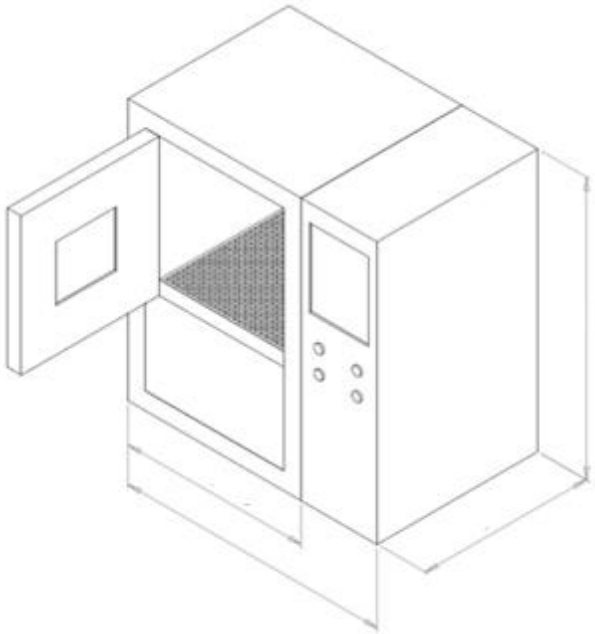
The enclosures have an IP Code of IP6X meaning it is dust tight and can have various degrees of water protection.

IP Dust and Water Resistance Evaluations

As previously mentioned, enclosures are evaluated on their protection against solid objects and liquid. An example would be water and dust resistant IP68. In this case, the enclosure is dust tight. It also met the requirements for immersion beyond one meter.
Another example is an enclosure that is IP67 water and dust resistant. The six represents dust tight. The seven represents immersion in water up to one meter. For a complete list of all of the possible IP5X ratings and IP6X ingress protection code combinations from IEC 60529, please see the chart at the bottom of this page.

Products that Require Dust Testing

Most military products require dust testing. These products are often exposed to falling dirt, blowing sand or other fine particles. Mining and construction equipment typically operate in harsh environments. Dust testing is required for those items.
Many medical devices and consumer electronics must be tested. Even though they operate in clean environments, the presence of dust can impact operations. Opening in enclosures such as fans and vents can attract buildups of material. Over time, this buildup can impact operations.
In a worst case scenario, dust explosions can occur. Combustible dust can accumulate and create hazardous locations. Mitigating this potentially dangerous situation is extremely important.



Why Is Keystone Compliance a Great Ingress Protection Dust Lab

What sets Keystone Compliance's IP5X dust protected and IP6X dust tight testing apart is our experience. We thoroughly understand the test standards. Our approach ensures accurate testing.
If the unit that requires testing is too large to move, no problem. We have experience completing ingress protection testing at the customer's facilities. Our largest dust chamber ever built was approximately 15 foot cubed!

Why is Keystone Compliance the right IP Code lab to complete your ingress testing? Our customers enjoy our short lead times on scheduling. We have a team of report writers that complete reports quickly.
In addition to the speed and accuracy, customers enjoy our ability to explain the process and testing requirements. Our consultative engineering support when failures occur is important. We are here to help. Lastly, we also offer affordable pricing and volume discounts.
This combination of services is what has made us one of the fastest growing companies in the country. We have an ISO-17025 accreditation, which ensures our test reports are accepted around the world.

Specific Quantities

For certain tests, a very specific amount of Test Dust / contaminant may be required. For these scenarios, Particle Technology can offer pre-weighed bespoke quantities of test dusts or contaminants based on your individual requirements. This applies to both standard mixtures / products as well as bespoke mixtures / products.

This solution offers our customers traceability with regards to the amount of test dust used and saves the time and effort of weighing the product out onsite. Advantages here include there being no need to have or maintain precision balances onsite and less handling of the product – test dusts will often present hazards to health by inhalation and measures including respiratory protective equipment (RPE) and local exhaust ventilation (LEV) are required when handling the material. With this option, the full amount is simply added straight from the container to the test media (airstream or liquid).

Settling Dust Features

RESOTECH dust chambers provide a low-mess solution to common settling dust test requirements for automotive components and electronics cabinets. Our deep W-shaped hopper provides better collection and dispersion dust without needing a vibration unit to shake the dust to the bottom of the collector.

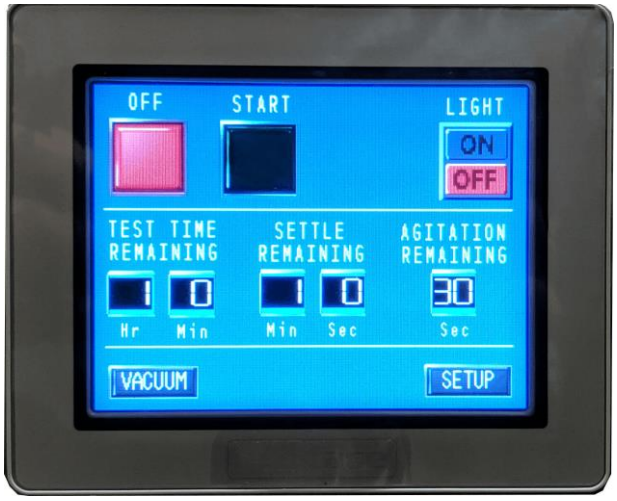
These chambers have a unique clamshell lid for easier, cleaner loading, compared with traditional top-loading designs. Optional reach-in glove ports allow rotating the test sample without opening the door.

The touch screen controller allows setting the duration of the agitation, the settling time of the dust, and the overall test time. The optional underpressure vacuum is also managed from the controller.

Settling dust chamber starting an agitation cycle.

Standard Features

- All stainless steel construction for easy cleaning
- Easy-access clamshell door with viewing window andlight (powered lift for EDC-54 model)
- W-shaped hopper for dust collection and dispersion
- Mesh product shelf over the hopper
- HEPA filter for exhaust air, flange provided for venting
- Two inch cable port
- Touch-screen controller



Applicable Test Standards

Automotive standard for light fixtures SAE J575 and J2139 require settling dust test with Portland cement.

ISO 20653 standard of Ingress Protection (IP) levels 5Kand 6K require dust testing: IP 5K Dust shall only pen- etrate in quantities which do not impair performance andsafety; IP 6K Dust shall not penetrate.

The IEC 60068-2-68, method LA2 and 60529 IP tests may require underpressure of the test sample.

The dust chambers can be used with all grades of Arizona road dust, talcum powder, or Portland cement.

Simple touch-screen controller for setting and monitoring.

The W-shaped hopper collects the dust after agitation. (Shownwithout the mesh shelf installed.)

Specifications

Settling Dust Chamber Models

Model	Interior Volume	Interior (W x D x H)	Exterior (W x D x H)	Power	Compressed Air
RESOTECH-011	27 cu. ft.	36" x 36" x 30" (914 x 914 x 726 mm)	54" x 40" x 53.3" (1372 x 1016 x 1354 mm)	115 V	80-120 psig (10 SCFM)
RESOTECH-012	54 cu. ft.	72" x 36" x 30" (1829 x 914 x 914 mm)	90" x 53.56" x 64.5" (2286 x 1360 x 1638 mm)	115 V	80-120 psig (20 SCFM)

Unique clamshell design makes loading the chambereasy and mess-free.

Options

- Compressed air moisture filter system to maintain dryness, ensuresdust moves freely.
- Under-pressure system (see below)
- Two reach-in glove ports
- Casters for portability
- Supply of Arizona road dust: course, medium, fine, or ultrafine.

Under-pressure system

This optional feature is designed for Intrusion Protec-tion (IP) rating testing of Category 1 electrical enclo- sures "with underpressure." An evacuation pump creates a slight vacuum in device under test.

This system includes a 2" vacuum port inside the chamber, an external filter (shown at right), and vacuum control from the touch screen.

Achieve up to 10 CFM vacuum flow or 8" water-column underpressure.

Vacuum control screen with speed setting and readout.

External filter protects vacuum and room from dust.

MODEL DESCRIPTION

Model Description	RESOTECH-011	RESOTECH-012
Internal (W*H*D)mm	36" x 36" x 30" (914 x 914 x 726 mm)	72" x 36" x 30" (1829 x 914 x 914 mm)
External (W*D*H)mm	54" x 40" x 53.3" (1372 x 1016 x 1354 mm)	90" x 53.56" x 64.5" (2286 x 1360 x 1638 mm)
Temperature Range	10℃~45℃	10℃~45℃
Relative Humidity	45%~75%RH	45%~75%RH
Mesh Diameter	50um	50um
Wire Spacing	Not more than 70um	Not more than 70um
Stone Powder Qty	2Kg/m3	2Kg/m3
Air Flow Speed	≤ 2m/s (Adjustable)	≤ 2m/s (Adjustable)
Blowing Time	0~9999 Hours	0~9999 Hours
Temp Sensor	Temperature Sensor PT100	Temperature Sensor PT100
Vibration Time	1~9999 min adjustable	1~9999 min adjustable
Test Time	1 min~100 Hours	1 min~100 Hours
Blowing Time	Adjust Manually	Adjust Manually
Dust Blowing Cycle	Continuous with Cycles	Continuous with Cycles
Shock Time	Automatically Control	Automatically Control
Dust System	PT100 Temperature Sensor	PTD + SSR Control
Blowing Dust System	Scroll Type Air Pump	Low Noise, Strong Power
Power Supply	AC220V±10% 50Hz, 2.2kW	AC380V±10% 50Hz, 3.5kW

Performance Specification	
6000~60000mg/cm3 Or 2Kg /m3	Dust Concentration
Metal Net Mesh Standard Diameter 50um	Mesh Diameter
Diameter between Metal Wires 45~50um	Metal Wires
Inner Material：304# Stainless Steel 1.0mm thickness	Chamber Structure
Outer Material：Cold rolled steel ,1.0mm thickness, and paint coated	
Control cabinet and testing cabinet are integral	
Special dust collector	
Single door/ Explosion proof handle	Chamber Door
Observation Window/Window light/ Window dust scraping devices	
On the door with dimension 270X360mm	Observation Window
Temperature control, Program control timer,	Control Panel
Working indication light, Power switch,	
Dust blow switch, Dust shaker switch	
Blowing dust blower, dust blowing outlet	Mechanical Room
Use 304 # stainless steel punching bending mesh	Sample Shelves
Easy operating and the shelves distance adjustable	
Power supply circuit breaker, controller, power distribution panel,	Power Control Cabinet
Cooling fan, over temperature protection, dust shaker motor	
With scale type heating pipe, P.I.D. Control heating thus achieve temperature balance	Heating System
With high speed blower blowing the dust to the test chamber	Dust Blowing Method
With vibration motor recollecting the dust on the inner chamber to the dust collector.	Dust Shaking Method

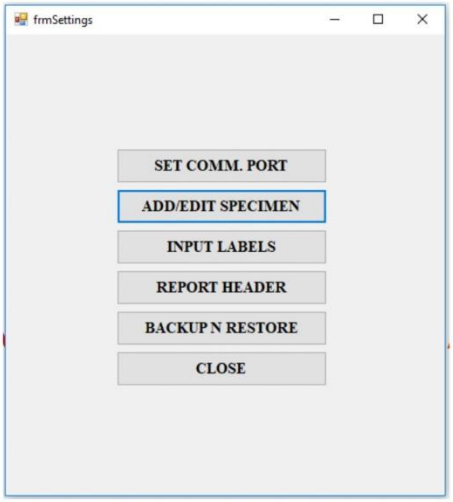
Electrical Control System

Imported LCD touch screen temperature controller	Controller
Control temperature, dust blowing time, dust float time separately.	
Dust shake, stop time and cycle time control etc.	
Available Program: Max.120 group, one program consist of 1~99 segments	Program Capacity
Available Memory Capacity: 1200 segments, Repeatable	
RS-232 Communication interface,	Communication
Which can be as monitor or remote control system, testing recorder.	
Program mode, Fixed value mode	Running Method
Touch screen, English Language available	Setting Method
Temperature setting ±5℃ max	Setting Range
Sand Dust Test Chamber Temp: 0.01℃, Time: 1min	Display Resolution
Power off recovery mode can be set : hot start/cold start/stop	Power off Memory
Starting time can be set freely	Preset Start
Machine automatically running when time reached after turn on the power	
With battery protection RAM	Curve Recording
Can save equipment set data, sampling value and sampling time.	
Max Recording time 60 days (when the sampling cycle with 1.5min)	

USD Sand & Dust Chambers

USD-Series Sand & Dust chambers provide an environment to test the exposure of automotive and electronic components to concentrated levels of dust in order to validate product seal integrity.

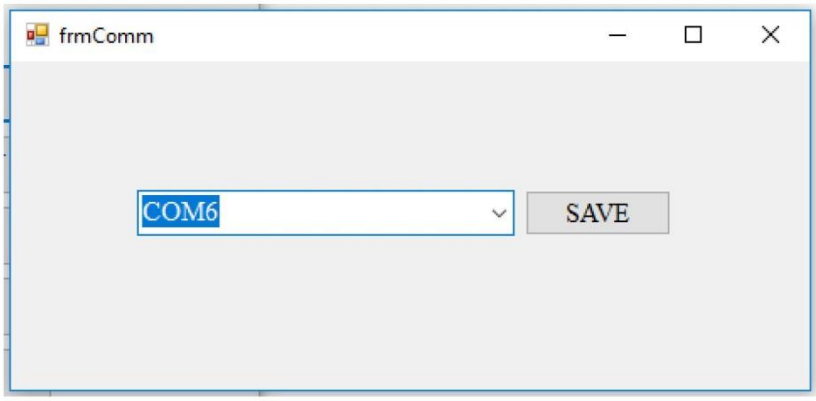
Pulses of compressed air are blown through a manifold located in the bottom of a collection trough, forcing dust up and over the product. Air pulses are time-programmed for “on” and “off” cycles. Concentration of dust can be easily varied by changing the air pressure and the amount of the blowing time. All dust chambers are designed to meet common test methods such as SAE J575, subparagraph “G”, J.I.S. D-0207-1977, and ASTM C-150-77. Approved dust types are Arizona Dust, Portland Cement Dust, and 213 Silica Sand.



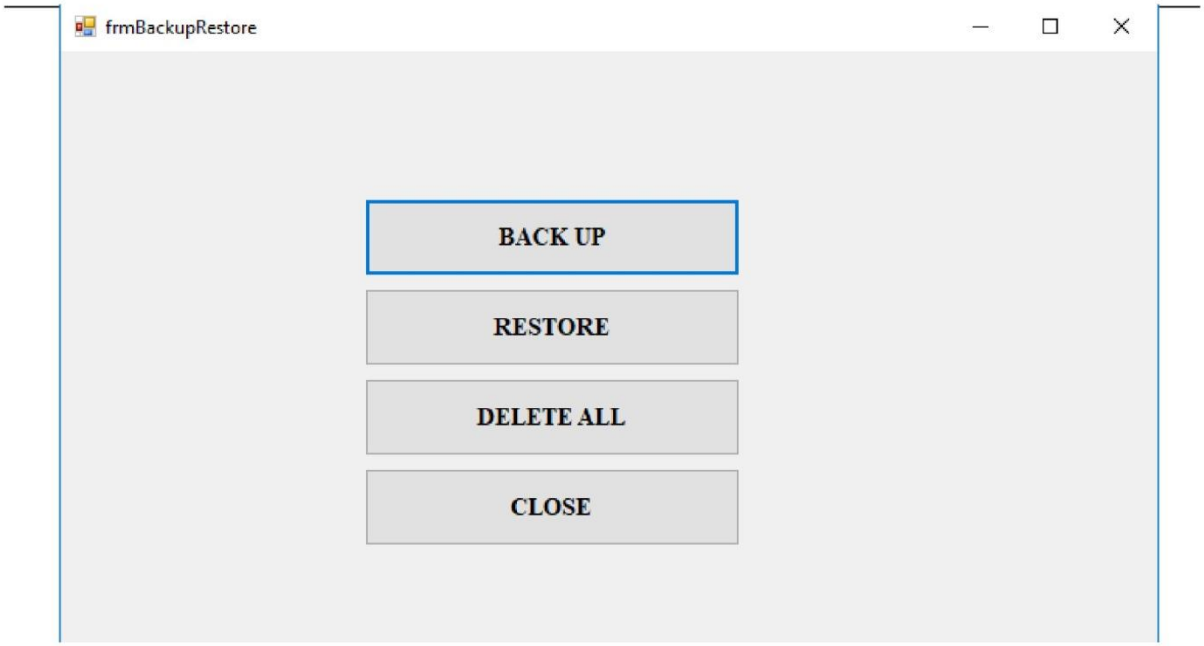
take backup of all test and settings here. It is advised to take back in regular intervals.

Restore

Any time if your software get corrupted or loss of data, administrator can restore back data back to system using this option. Care should be taken while restoring the data, by clicking delete all data administrator has to clear all current then use restore.(Note : only the data till backup date will be restored).

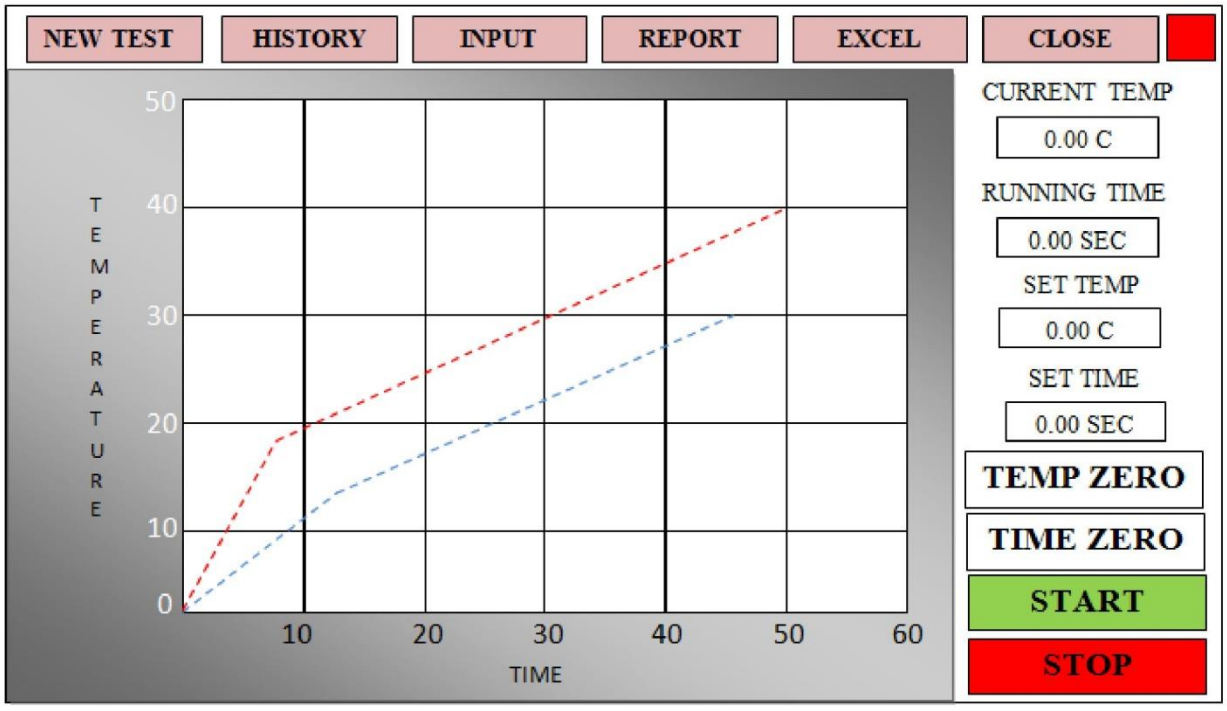


HUMIDITY CHAMBER TESTING SOLUTION BY RESOTECH



TESTING

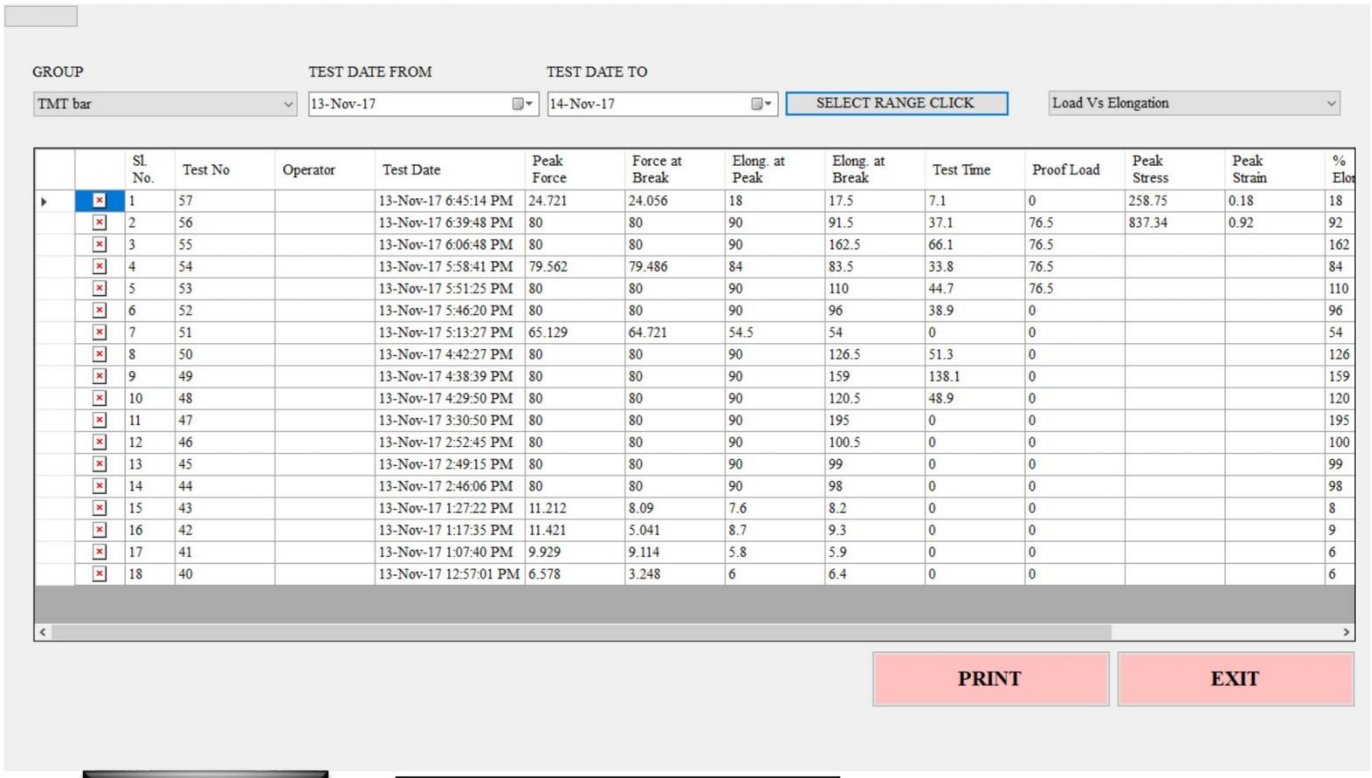
New Test – Old Test data and graph get cleared and ready for new test.
User has to select the group in which he want to do testing. When user select a group all settings get loaded.
Click Start to start test. Input details given below.



HUMIDITY CHAMBER TESTING SOLUTION BY RESOTECH

HISTORY

Here user can see all previous test and take print out from here.



	Sl. No.	Test No	Operator	Test Date	Peak Force	Force at Break	Elong. at Peak	Elong. at Break	Test Time	Proof Load	Peak Stress	Peak Strain	% Elo
▸	1	57		13-Nov-17 6:45:14 PM	24.721	24.056	18	17.5	7.1	0	258.75	0.18	18
	2	56		13-Nov-17 6:39:48 PM	80	80	90	91.5	37.1	76.5	837.34	0.92	92
	3	55		13-Nov-17 6:06:48 PM	80	80	90	162.5	66.1	76.5			162
	4	54		13-Nov-17 5:58:41 PM	79.562	79.486	84	83.5	33.8	76.5			84
	5	53		13-Nov-17 5:51:25 PM	80	80	90	110	44.7	76.5			110
	6	52		13-Nov-17 5:46:20 PM	80	80	90	96	38.9	0			96
	7	51		13-Nov-17 5:13:27 PM	65.129	64.721	54.5	54	0	0			54
	8	50		13-Nov-17 4:42:27 PM	80	80	90	126.5	51.3	0			126
	9	49		13-Nov-17 4:38:39 PM	80	80	90	159	138.1	0			159
	10	48		13-Nov-17 4:29:50 PM	80	80	90	120.5	48.9	0			120
	11	47		13-Nov-17 3:30:50 PM	80	80	90	195	0	0			195
	12	46		13-Nov-17 2:52:45 PM	80	80	90	100.5	0	0			100
	13	45		13-Nov-17 2:49:15 PM	80	80	90	99	0	0			99
	14	44		13-Nov-17 2:46:06 PM	80	80	90	98	0	0			98
	15	43		13-Nov-17 1:27:22 PM	11.212	8.09	7.6	8.2	0	0			8
	16	42		13-Nov-17 1:17:35 PM	11.421	5.041	8.7	9.3	0	0			9
	17	41		13-Nov-17 1:07:40 PM	9.929	9.114	5.8	5.9	0	0			6
	18	40		13-Nov-17 12:57:01 PM	6.578	3.248	6	6.4	0	0			6

REPOR

REPORT

After each testing the report will be auto generated and saved into specified folder.

User can generate a report directly from testing window and from history.

range settings also here.

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HUMIDITY CHAMBER TESTING SOLUTION BY RESOTECH

EXCEL

EXCEL
User save raw test data into excel file using this option.

TEST REPORT FORMAT

EXCEL

PDF

WORD

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