MTS
ALPHA INDUSTRIES
MATERIAL TESTING SOLUTIONS

Authorized Dealer: Sales and Service

NH Instruments
Testing and Metallography Solutions

NH INSTRUMENTS
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T. Dasarahalli, Bangalore 560057, Karnataka.
Email:nhinstruments24@gmail.com
Mobile:8660651375 , 8660942368

Accuracy and Resolution

1. Piston Stroke **: 200mm**
2. Load Resolutions : **50000** / **100000 Counts**
3. Load Accuracy : ± 1% **of shown reading**
4. Displacement resolution : **0.01 mm**
5. Displacement Accuracy : ± 0.5% **of shown reading**
6. Extension Resolution : **0.001 mm**
7. Extension Accuracy : ± 1% **of shown reading**

Note :

1. **EE2 is 2 mm Extension and 25/50 mm Gauge Length Extensometer**. It is used for calculating **0.1, 0.2 up to 1% Proof Stress** and proof load values and **Young's Modulus / Modulus of elasticity**

2. **UTES (Servo) Machines** will have the facility of conducting **Stress Rate Control / Load Rate Controlled / CH. Strain Control Tests** as per ASTM E8, **ISO 6892 and IS 1608** (Control Method A2 and Control Method B in ISO 6892 / IS 1608). **Achieved Stress Rate Control / Load Rate Controlled / CH. Strain Rate controlled Graphs can be printed on the test reports as per NABL requirement**

3. **Warranty : 1 years from the date of installation for all Electronic Control Panel.1 year for Motors and other electronic components**

HYDRAULIC SERVO additional features (Only for Servo):

1. Load Rate accuracy control +- 3 % or +- 3 kN of set Load Rate within specified limits
2. Displacement Rate accuracy of +- 2% or +- 2 mm of set Disp. Rate
3. Real time display of Load Rate and Displacement Rate
4. Working Auto Detect yield facility for changing from Load Rate to Displacement Rate
5. Hold Load upto 250 Secs with appropriate valve settings.
6. Load Rate / Stress Rate can be set in required units

UTE Hydraulic Manual Gripping Machine

Electronic Hardware Points:

1. 50000 Counts over the range for Load
2. 100,000 counts optional for load
3. Extensometer Facility integrated by default in Motherboard
4. Single Point Controller Calibration For Load and Extensometer.

a. No potentiometers required

b. No PC software required

5. Peak Load displayed on the controller post test automatically.
6. Supports extensometer of any make
7. Machine turn off on rupture - No Pc software required
8. RS485 Communication protocol with PC software - works upto 100 meters

Software Points

1. Load / Displacement / Extension display on Home Page.
2. Video Extensometer Integration
3. Sample type customization
4. Real time graph in selected units for Load and Stress.
5. Integration of multiple extensometers in one system
a. Can save calibration for each one of the seperately.
6. Real Time Load Rate/ Disp Rate / Stress rate display in Servo Mode
7. Ability to Freeze real time graph
8. Prefect yield calculation as per customer demand
    a. Accurate calculation from graphical method
    b. ASTM method offset selection from 0.1 % to 1 %
    c. Yield calculation method can be change post test
9. Ability to select / unselect results displayed in printed report.
10. Ability to change input parameters (Gauge length / CS. Area) post test.
11. Ability to add up to 10 extra Key-Value Pairs as input. Customer can use these key value pairs as per his requirement
12. Ability to add up to 2 extra Key-Value Pairs in the report header. Customer can use these key value pairs as per his requirement
13. Ability to export reports to excel with graphs.
14. Ability to print all Test Data Points of a selected test in selected units.
15. Graph Cursor - Zoom - Pan Facility
16. Unlimited Tests in one batch file.
17. Proof stress calculation from 0.1 % to 1 %
18. Report Customization as per customer demand.

Extensometer Test - Stress vs Strain and Load vs Displacement

Date : 10/1/2023
Customer Name : Tata 4 mm sample Trial

Test Type :	: Tensile Test - Stress Vs Strain
File Name	: rval_demo1_45deg
Sample Type	: Rectangular
Rate Disp.	: 5.0 (mm/min)

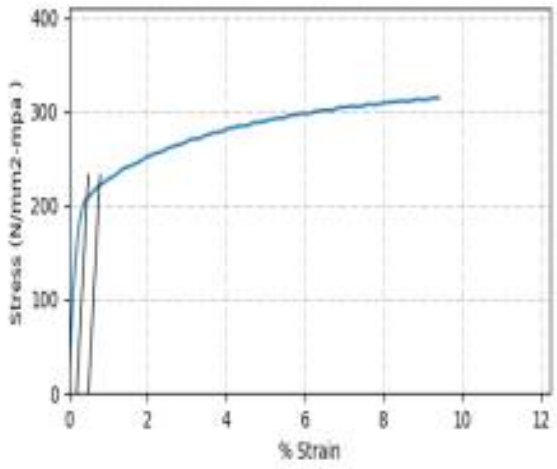
Gauge Length (mm)	: 80.0
Thickness (mm)	: 0.58
Width (mm)	: 21.0
Initial Area (mm2)	: 12.18

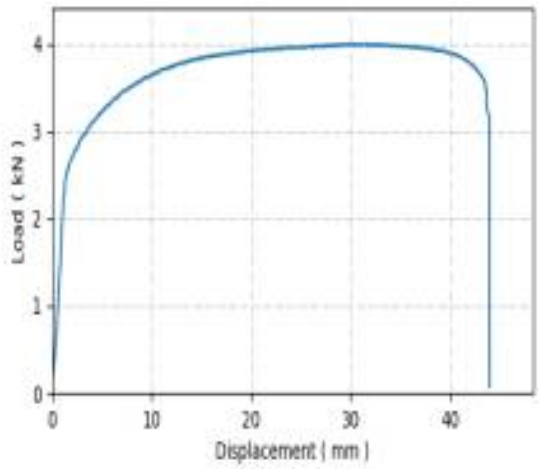
Sample Id : : Sample 1

:

Material Test Results

Max. Load (kN)	: 4.000
Tensile Strength (N/mm2)	: 328.431
Disp. at Max. Load (mm)	: 30.08
Max. Displacement (mm)	: 43.96
Yield Load (kN)	: 2.887
Yield Stress (N/mm2)	: 237.062
Proof Stress 0.2 % Offset (N/mm2)	: 206.496
Proof Stress 0.5 % Offset (N/mm2)	: 221.163
Proof Load 0.2 % Offset (kN)	: 2.515
Proof Load 0.5 % Offset (kN)	: 2.694
Youngs Modulus (N/mm2)	: 62534.729
Max. Extension (mm)	: 4.7
Extension @ Fmax(mm)	: 4.68
% AGT	: 9.36
YS/UTS	: 0.63
UTS/YS	: 1.59





Servo Test Reports with Load vs Time (345 kN/min) and Displacement vs Time Graphs (12 mm/min)

345 kN/min pre yield speed and 12 mm/min Post Yield Speed

Date : 17/8/2021
Customer Name :

Input Data

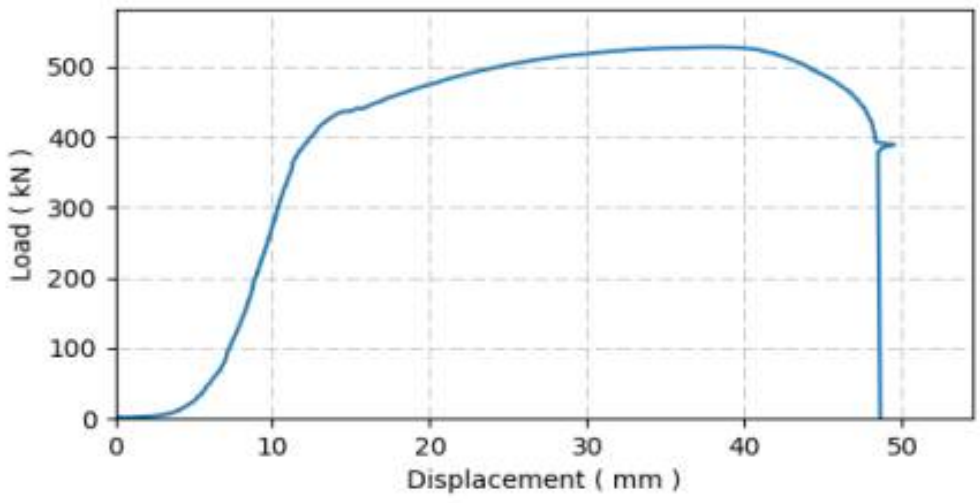
Test Type :	: Tensile Test
File Name	: demooo
Rate Load.	: 345.3 (kN/min)
Sample Type	: Tmt
Rate Disp.	: 12.0 (mm/min)

Density (gm/cc)	: 7.85
Gauge Length (mm)	: 160.0
Length (mm)	: 440.0
Weight (Kg)	: 2.84
Initial Area (mm2)	: 822.24
Weight (kg/meter)	: 6.455

Grade	: dddd
Make	: Jindal
Nominal Dia	: 25

Material Test Results

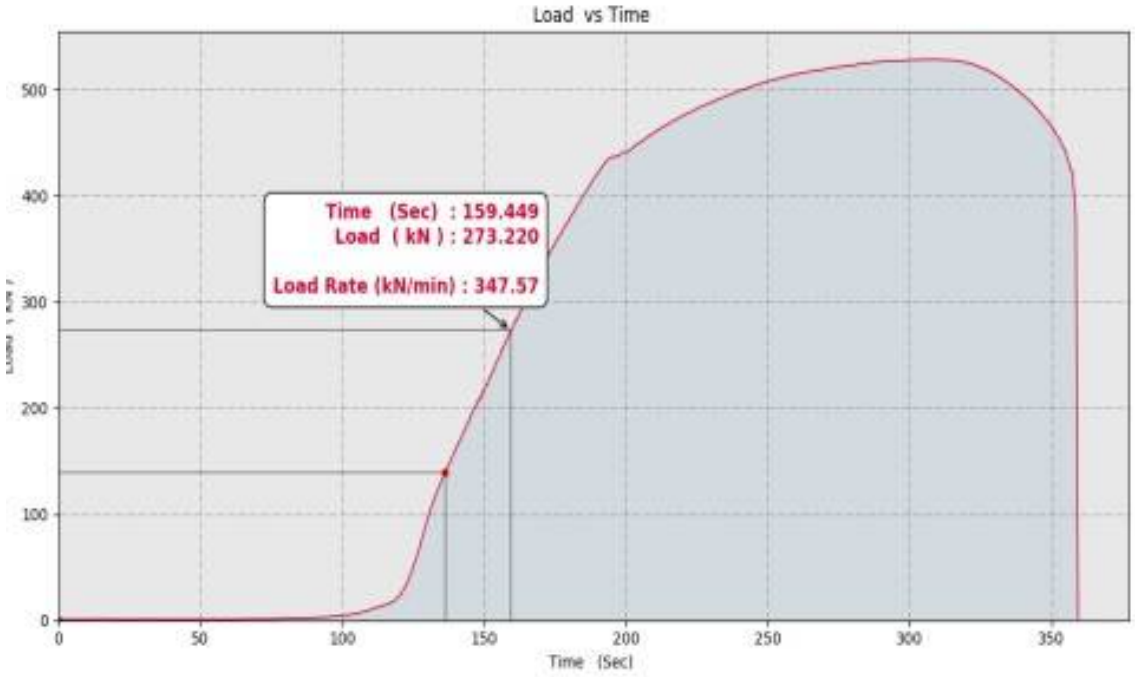
Max. Load (kN)	: 528.26
Ult. Stress (N/mm2)	: 642.464
Disp. at Max. Load (mm)	: 38.23
Max. Displacement (mm)	: 48.61
Yield Load (kN)	: 448.5
Yield Stress (N/mm2)	: 545.461
YS/UTS	: 0.849
UTS/YS	: 1.178
Elongation %	: 12.500
Final Gauge Length (mm)	: 180.0

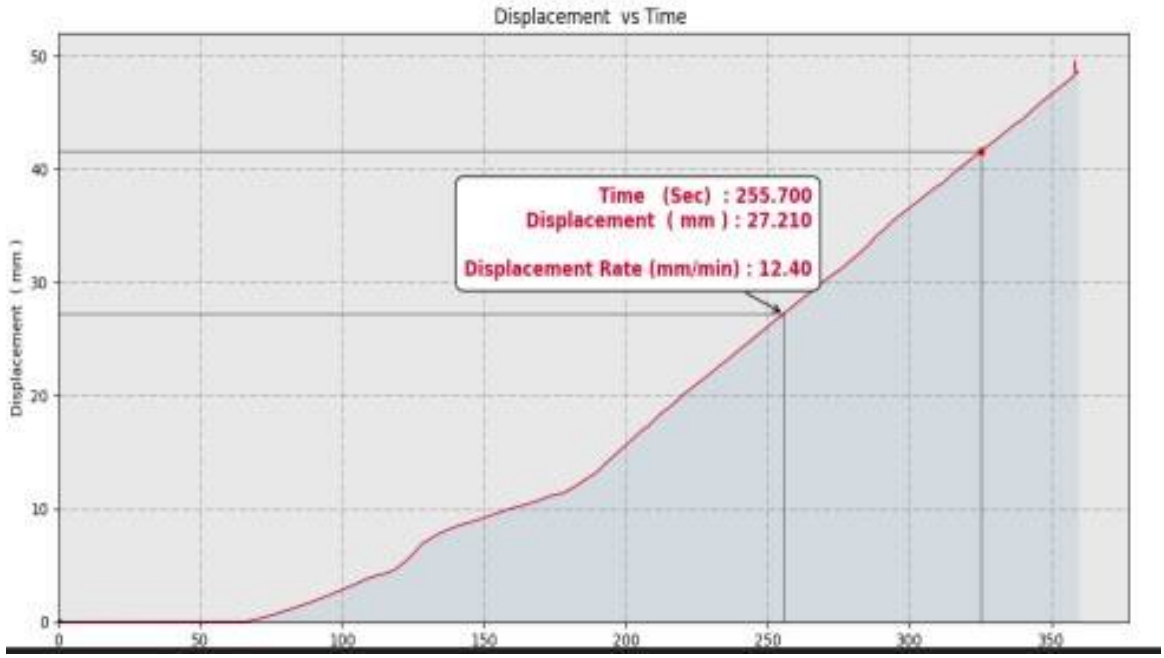


(345 kN/min) and (12 mm/min)

File Name : demooo

Load Rate : 347.57 (kN/min) from 139.84 kN [136.4 sec] To 273.22 kN [159.4 sec]
Displacement Rate : 12.4 (mm/min) from 41.58 mm [325.2 sec] To 27.21 mm [255.7 sec]





Servo Test Reports with Load vs Time (288 kN/min) and Displacement vs Time Graphs (12 mm/min)

TEST RESULT

288.9 kN/min Pre Yield and 12mm/min Post Yield Speed Control

Press Esc to exit full screen

Date : 17/8/2021

Customer Name :

Input Data

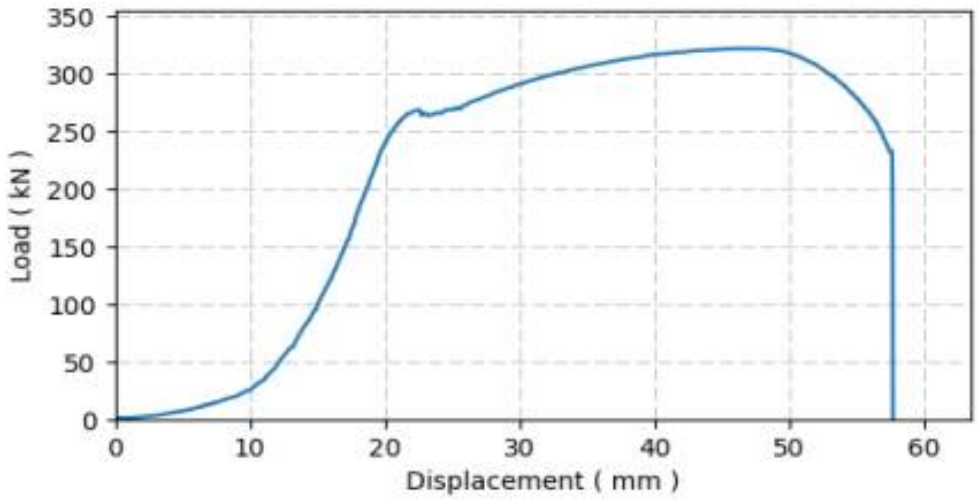
Test Type :	: Tensile Test
File Name	: demoo13
Rate Load.	: 288.9 (kN/min)
Sample Type	: Tmt
Rate Disp.	: 12.0 (mm/min)

Density (gm/cc)	: 7.85
Gauge Length (mm)	: 125.0
Length (mm)	: 400.0
Weight (Kg)	: 2.52
Initial Area (mm2)	: 802.55
Weight (kg/meter)	: 6.3

Grade	: fe-500
Make	: Jindal
Nominal Dia	: 25

Material Test Results

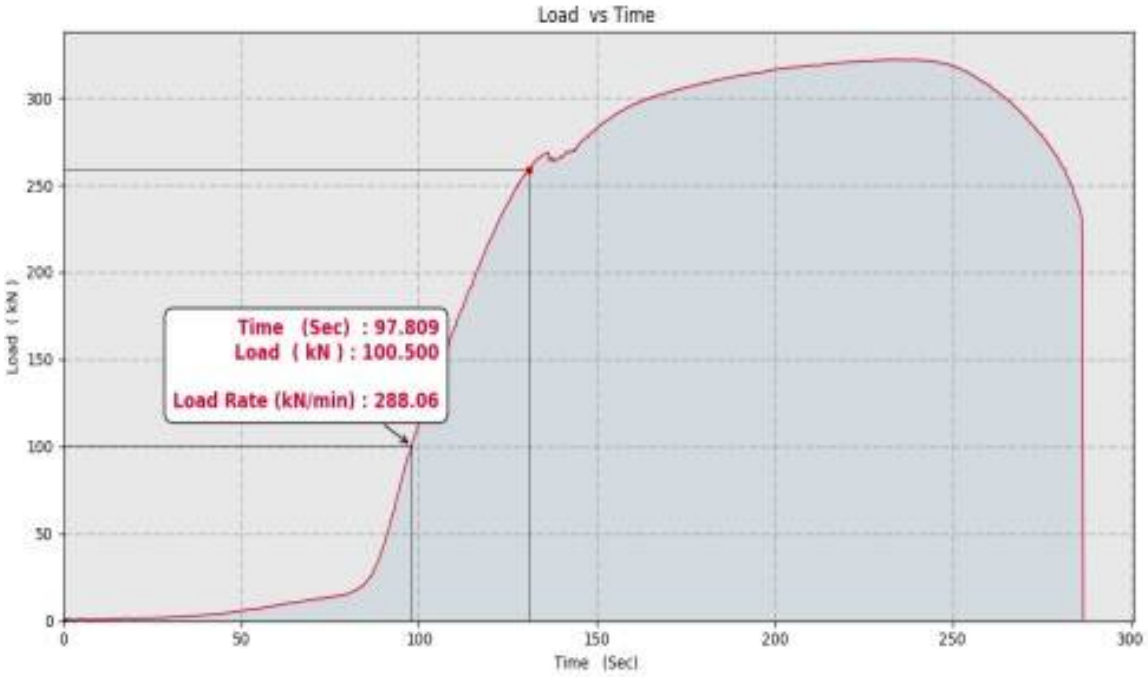
Max. Load (kN)	: 321.92
Ult. Stress (N/mm2)	: 401.121
Disp. at Max. Load (mm)	: 46.27
Max. Displacement (mm)	: 57.66
Yield Load (kN)	: 275.28
Yield Stress (N/mm2)	: 343.007
YS/UTS	: 0.855
UTS/YS	: 1.169
Elongation %	: 12.000
Final Gauge Length (mm)	: 140.0

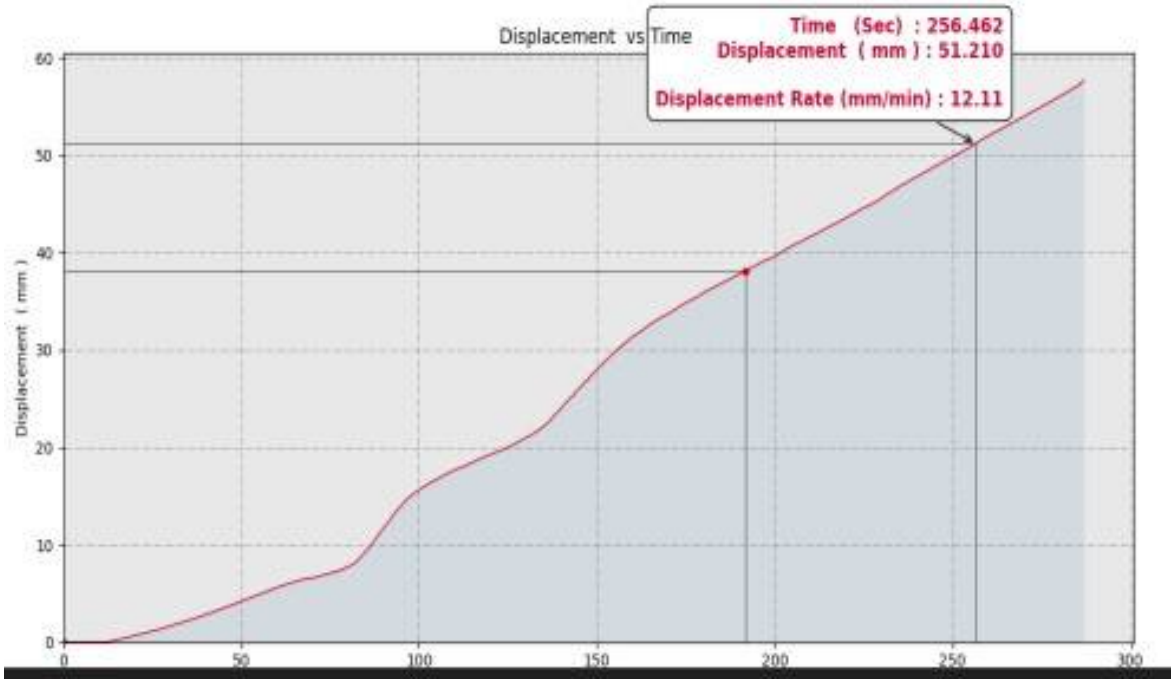


Tested By **Checked By** **Approved By**

File Name : demoo13

Load Rate : 288.06 (kN/min) from 259.08 kN [130.8 sec] To 100.5 kN [97.8 sec]
Displacement Rate : 12.11 (mm/min) from 38.16 mm [191.8 sec] To 51.21 mm [256.5 sec]





(288 kN/min) and (12 mm/min)

Test Reports - Video Extensometer

TENSILE TEST REPORT

VIDEO EXTENSOMETER - ALPHA INDUSTRIES

All the below test results conform to given standard
Line 2 written 4 times Line 2 written 4 times Line 2 written 4 times Line 2 written 4 times

Date : 23/11/2021
Customer Name : a

ALPHA INDUSTRIES
MATERIAL TESTING SOLUTIONS

Input Data

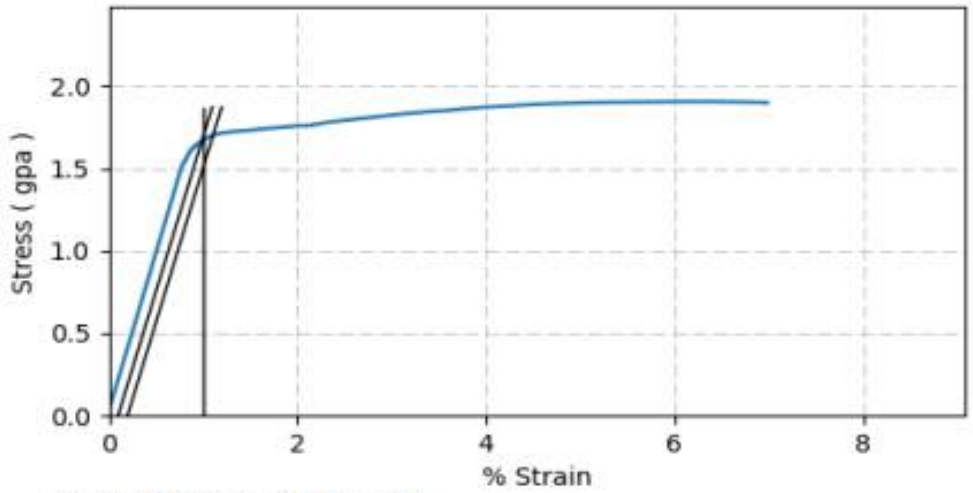
Test Type :	: Tensile Test - Stress Vs Strain
Sample Type	: Strand
File Name	: final-bsrm-1

D1 : 5.044 , D2 : 5.044 ,	D3 : 5.037 , D4 : 5.05 ,
D5 : 5.069 , D6 : 5.052 ,	D7 - core : 5.261 ,
Gauge Length (mm)	: 600.0
Lay Length (mm)	: 150.0
Nominal Dia (mm)	: 15.2
Straightness (mm)	: 100.0
Initial Area (mm2)	: 141.86

Sample Id :	: Gate Innersadda
1. Heat No	: 123
2. Key 1	: Value 1
3. Key 2	: Value 2
4. Key 3	: Value 3

Material Test Results

Max. Load (kN)	: 271.243
YL @ 1.0 % EUL (kN)	: 238.190
Proof Load 0.1 % Offset (kN)	: 237.339
Proof Load 0.2 % Offset (kN)	: 242.304
Youngs Modulus (kN/mm2)	: 194.335
Total Elongation @ Rupture (mm)	: 42.16
Elongation %	: 7.193
Final Gauge Length (mm)	: 642.16



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Tested By **Witnessed By** **Authorized By**

Test Reports - Video Extensometer

TENSILE TEST REPORT

VIDEO EXTENSOMETER - BSRM

All the below test results conform to given standard
Line 2 written 4 times Line 2 written 4 times Line 2 written 4 times Line 2 written 4 times

Date : 24/11/2021
Customer Name : a

ALPHA INDUSTRIES
MATERIAL TESTING SOLUTIONS

Input Data

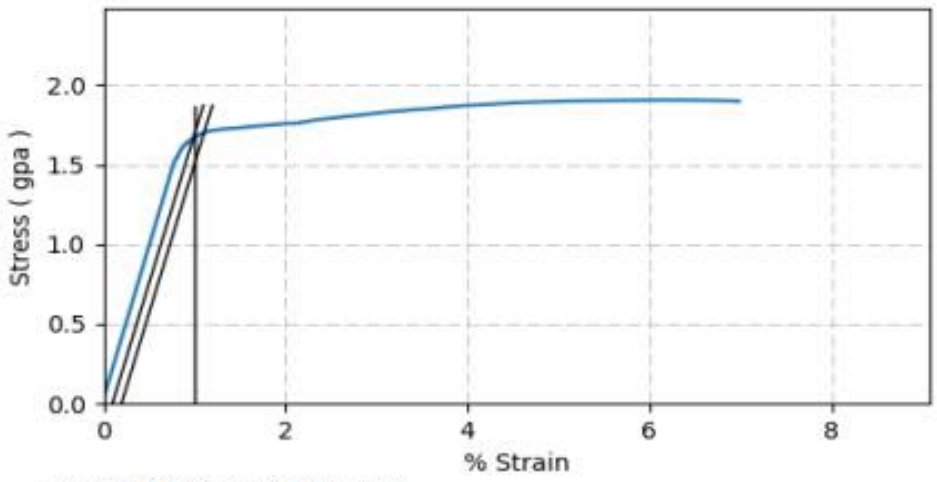
Test Type : : Tensile Test - Stress Vs Strain
Sample Type : Strand
File Name : final-bsrm-2

D1 : 5.046 , D2 : 5.042 , D3 : 5.039 , D4 : 5.05 ,
D5 : 5.067 , D6 : 5.052 , D7 - core : 5.261 ,
Gauge Length (mm) : 600.0
Lay Length (mm) : 150.0
Nominal Dia (mm) : 15.2
Straightness (mm) : 100.0
Initial Area (mm2) : 141.86

Sample Id : : Gate Innersadda
1. Heat No : 123
2. Key 1 : Value 1
3. Key 2 : Value 2
4. Key 3 : Value 3

Material Test Results

Max. Load (kN)	: 270.243
YL @ 1.0 % EUL (kN)	: 237.190
Proof Load 0.1 % Offset (kN)	: 236.339
Proof Load 0.2 % Offset (kN)	: 241.304
Youngs Modulus (kN/mm2)	: 192.335
Total Elongation @ Rupture (mm)	: 42.16
Elongation %	: 7.027
Final Gauge Length (mm)	: 642.16



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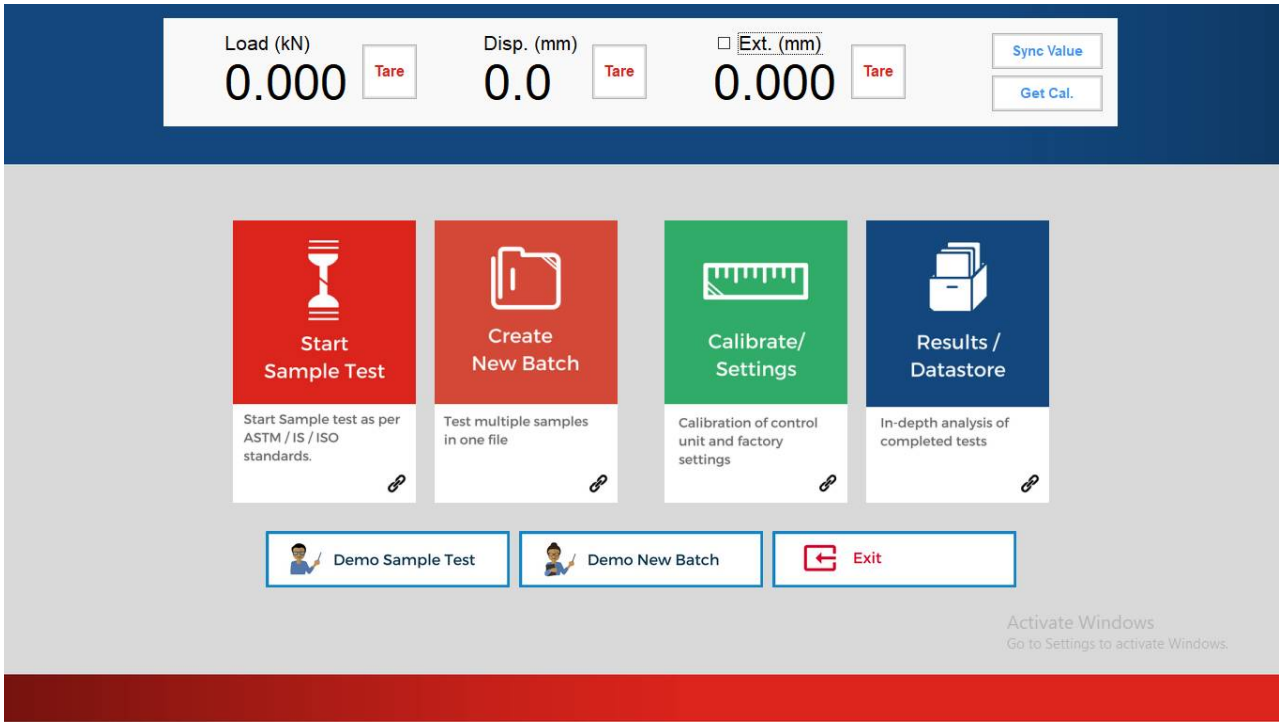
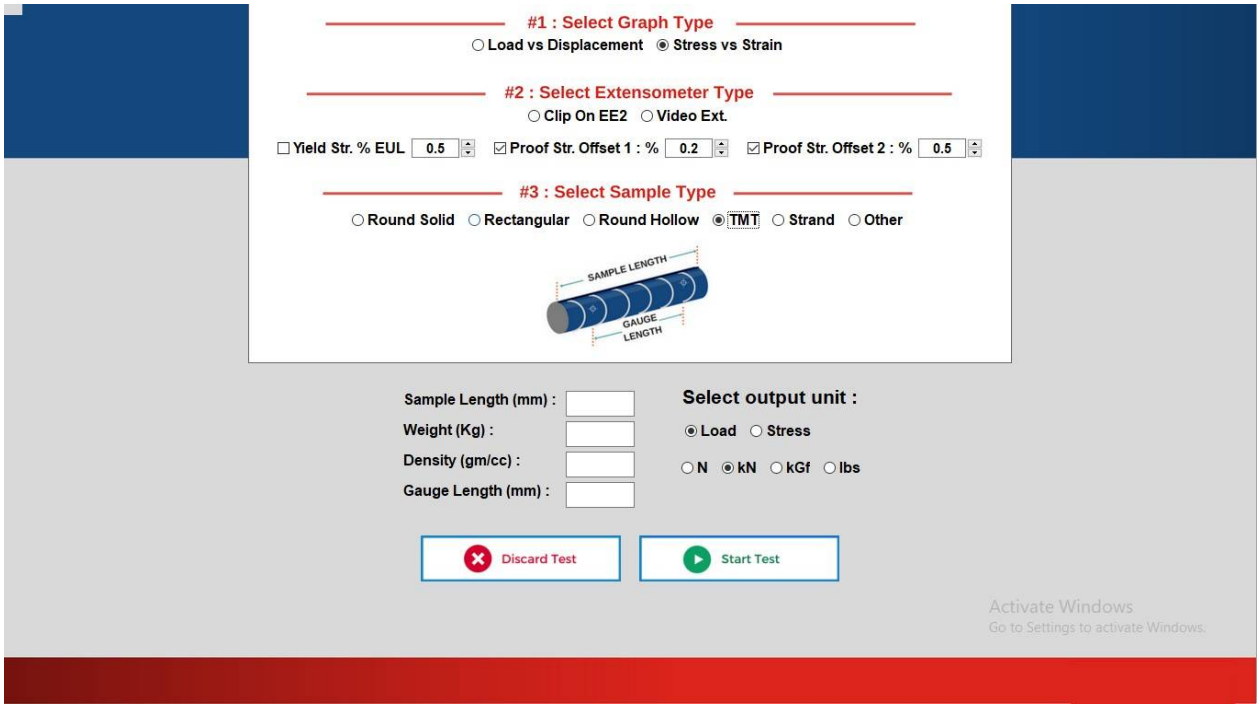
Tested By **Witnessed By** **Authorized By**

Software Screenshots





Control panel Indicator