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GSTIN : 27AAYPD7338Q1ZO

## Accuracy and Resolution

1. Piston Stroke : **200mm**
2. Load Resolutions : **50000 / 100000 Counts**
3. Load Accuracy :  $\pm 1\%$  **of shown reading**
4. Displacement resolution : **0.01 mm**
5. Displacement Accuracy :  $\pm 0.5\%$  **of shown reading**
6. Extension Resolution : **0.001 mm**
7. Extension Accuracy :  $\pm 1\%$  **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  $\pm 3\%$  or  $\pm 3$  kN of set Load Rate within specified limits
2. Displacement Rate accuracy of  $\pm 2\%$  or  $\pm 2$  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

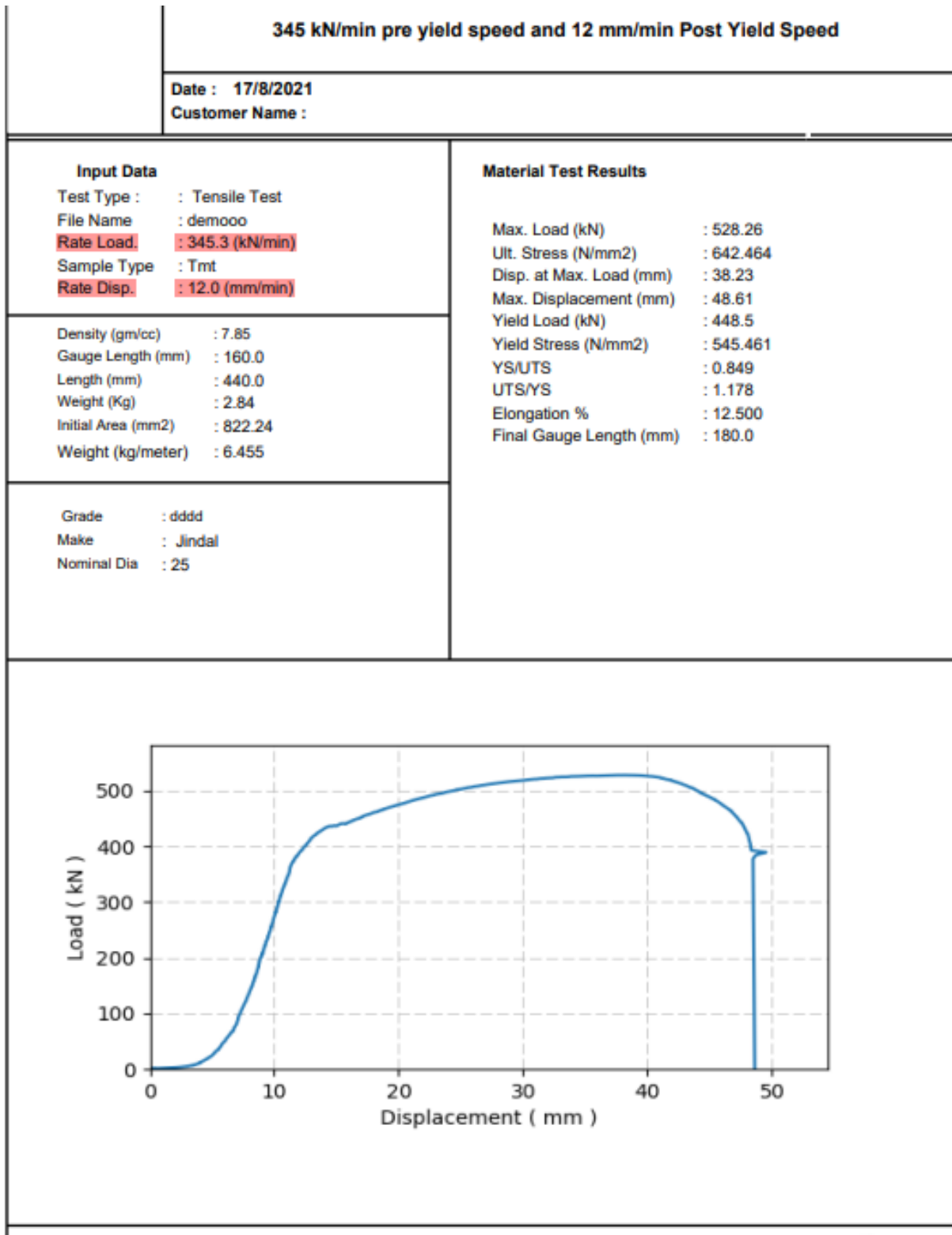
## Software Points

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

<b>Date :</b> 10/1/2023 <b>Customer Name :</b> Tata 4 mm sample Trial	
<b>Test Type :</b> : Tensile Test - Stress Vs Strain <b>File Name :</b> : rval_demo1_45deg <b>Sample Type :</b> : Rectangular <b>Rate Disp. :</b> : 5.0 (mm/min)	<b>Material Test Results</b> Max. Load (kN) : 4.000 Tensile Strength (N/mm <sup>2</sup> ) : 328.431 Disp. at Max. Load (mm) : 30.08 Max. Displacement (mm) : 43.96 Yield Load (kN) : 2.887 Yield Stress (N/mm <sup>2</sup> ) : 237.062 Proof Stress 0.2 % Offset (N/mm <sup>2</sup> ) : 206.496 Proof Stress 0.5 % Offset (N/mm <sup>2</sup> ) : 221.163 Proof Load 0.2 % Offset (kN) : 2.515 Proof Load 0.5 % Offset (kN) : 2.694 Youngs Modulus (N/mm <sup>2</sup> ) : 62534.729 Max. Extension (mm) : 4.7 Extension @ Fmax(mm) : 4.68 % AGT : 9.36 YS/UTS : 0.63 UTS/YS : 1.59
Gauge Length (mm) : 80.0 Thickness (mm) : 0.58 Width (mm) : 21.0 Initial Area (mm <sup>2</sup> ) : 12.18  Sample Id : : Sample 1 :	

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

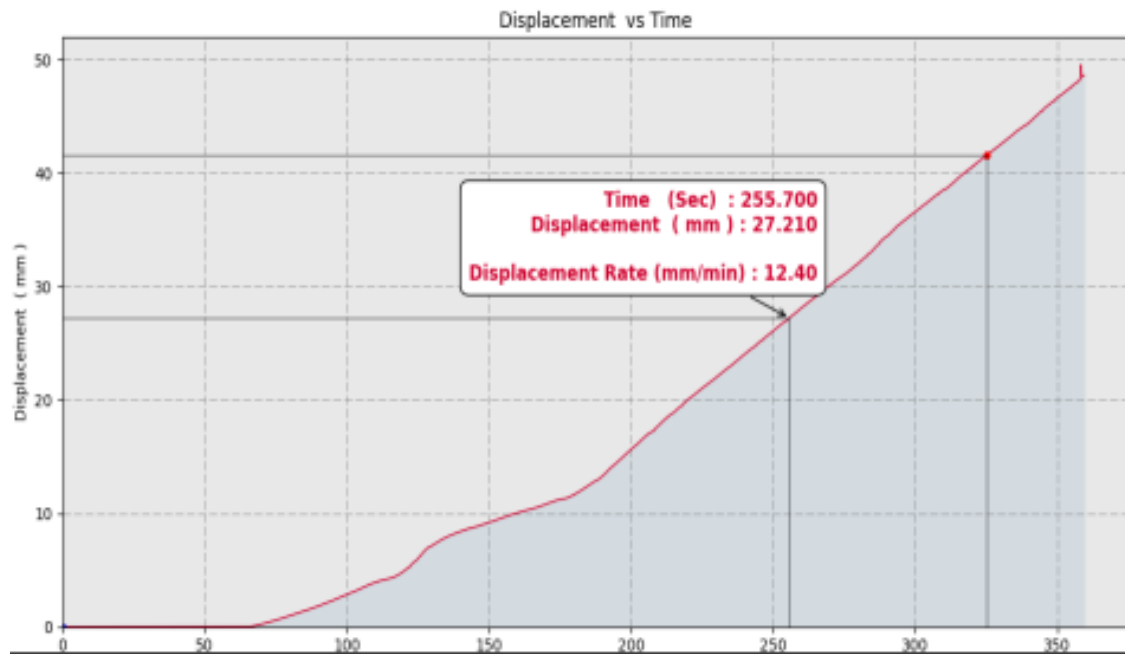
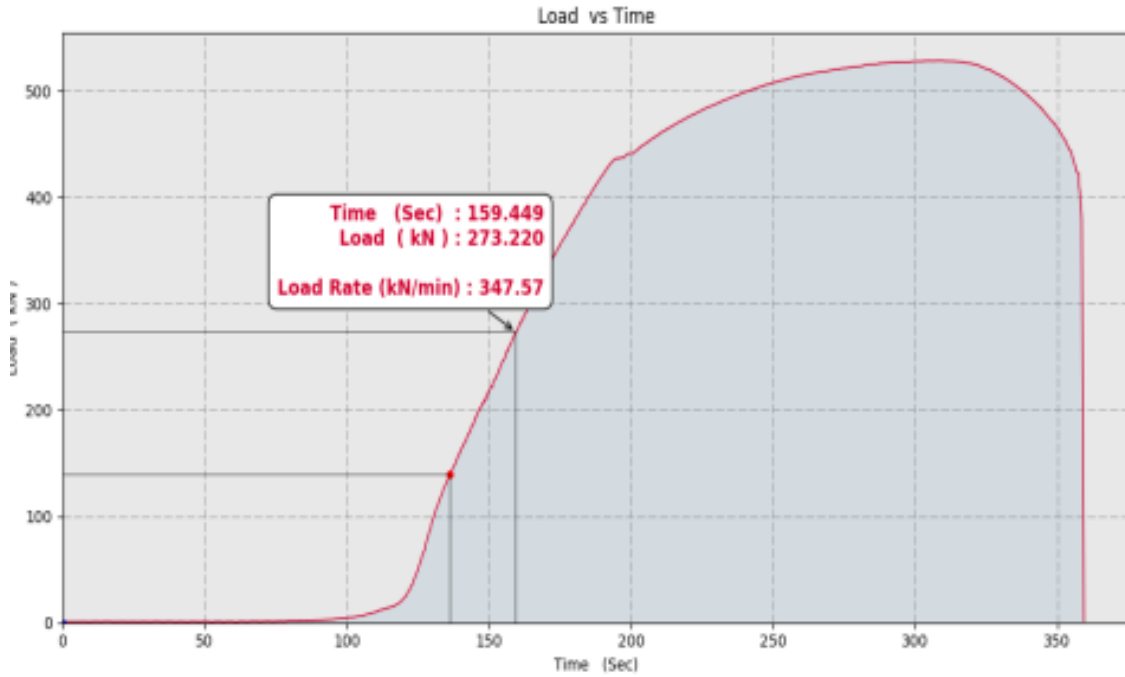


**(345 kN/min) and (12 mm/min)**

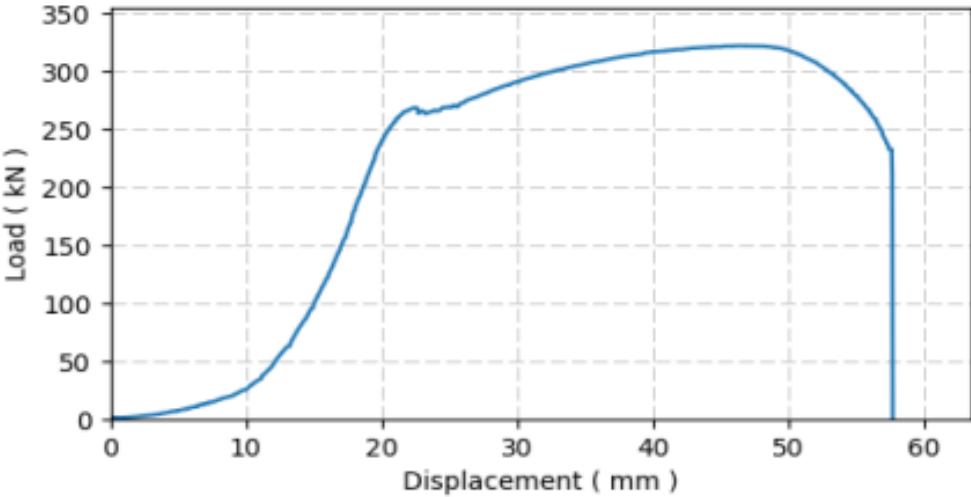
File Name : demooo

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]



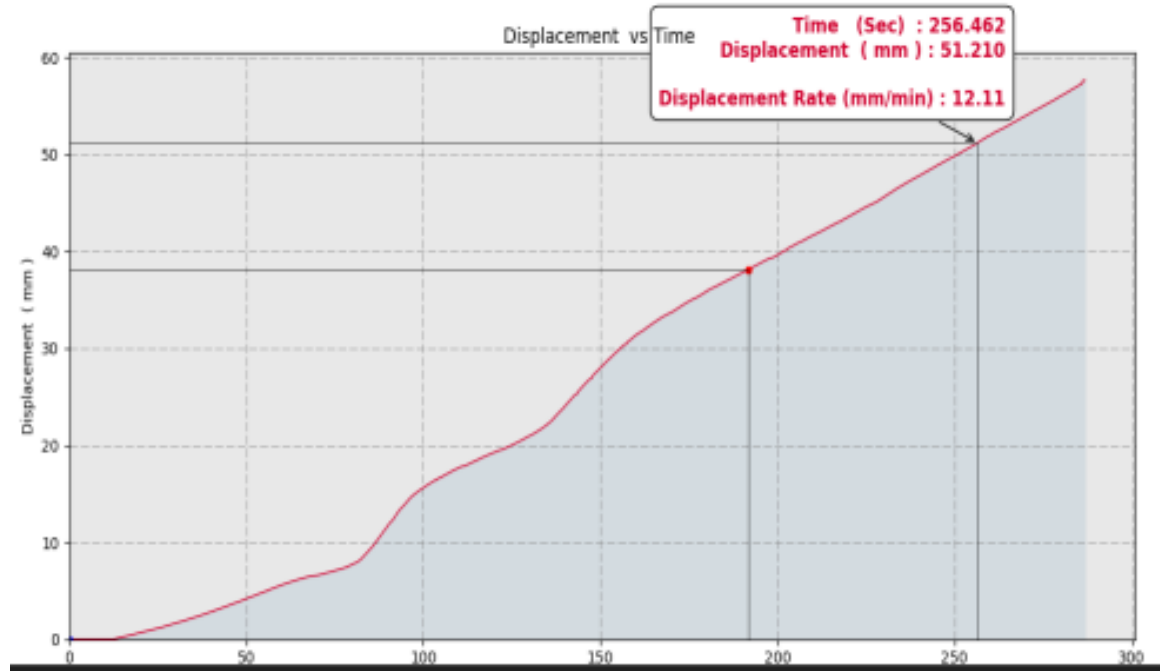
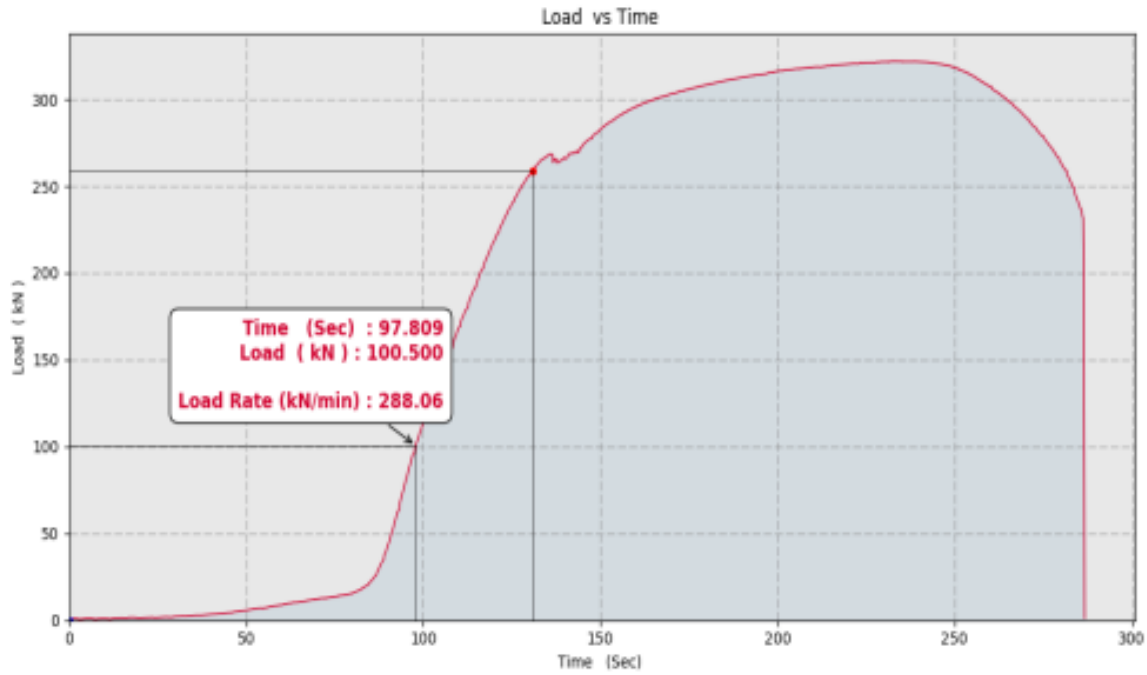
**Servo Test Reports with Load vs Time (288 kN/min)  
and Displacement vs Time Graphs (12 mm/min)**

<b>TEST RESULT</b>	
288.9 kN/min Pre Yield and 12mm/min Post Yield Speed Control	
<div style="border: 1px solid gray; display: inline-block; padding: 2px 10px;">Press <span style="border: 1px solid gray; padding: 0 5px;">Esc</span> to exit full screen</div>	
Date : 17/8/2021 Customer Name :	
<p><b>Input Data</b></p> <p>Test Type : : Tensile Test            File Name : : demoo13  <b>Rate Load. : 288.9 (kN/min)</b>            Sample Type : : Tmt  <b>Rate Disp. : 12.0 (mm/min)</b></p> <hr/> <p>Density (gm/cc) : : 7.85            Gauge Length (mm) : : 125.0            Length (mm) : : 400.0            Weight (Kg) : : 2.52            Initial Area (mm<sup>2</sup>) : : 802.55            Weight (kg/meter) : : 6.3</p> <hr/> <p>Grade : : fe-500            Make : : Jindal            Nominal Dia : : 25</p>	<p><b>Material Test Results</b></p> <p>Max. Load (kN) : : 321.92            Ult. Stress (N/mm<sup>2</sup>) : : 401.121            Disp. at Max. Load (mm) : : 46.27            Max. Displacement (mm) : : 57.66            Yield Load (kN) : : 275.28            Yield Stress (N/mm<sup>2</sup>) : : 343.007            YS/UTS : : 0.855            UTS/YS : : 1.169            Elongation % : : 12.000            Final Gauge Length (mm) : : 140.0</p>
 <p>The graph plots Load (kN) on the y-axis (0 to 350) against Displacement (mm) on the x-axis (0 to 60). The curve starts at the origin, rises to a yield point of approximately 275 kN at 22 mm displacement, then continues to a maximum load of 321.92 kN at 46.27 mm displacement. After the peak, the load decreases to about 230 kN at 57.66 mm displacement, where it drops sharply to zero.</p>	
Tested By	Checked By
Approved By	

File Name : demo013

Load Rate : 288.06 (kN/min) from 259.08 kN [130.8 sec] To 100.5 kN [97.8 sec]


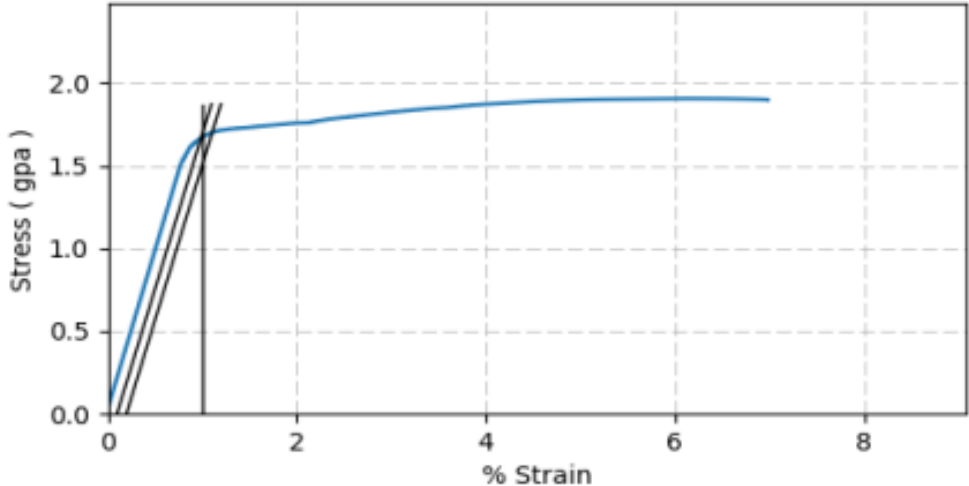
Displacement Rate : 12.11 (mm/min) from 38.16 mm [191.8 sec] To 51.21 mm [256.5 sec]




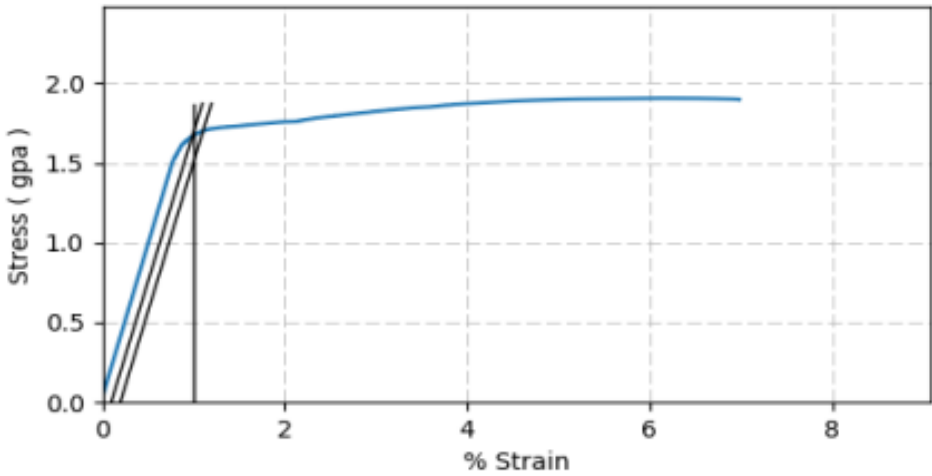
(288 kN/min) and (12 mm/min)



# Test Reports - Video Extensometer

TENSILE TEST REPORT	
<b>VIDEO EXTENSOMETER - ALPHA INDUSTRIES</b>	
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	
	
<p style="text-align: center;"><b>Input Data</b></p> <p>                         Test Type : : Tensile Test - Stress Vs Strain                          Sample Type : : Strand                          File Name : : final-bsrm-1                     </p> <hr/> <p>                         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 (mm<sup>2</sup>) : : 141.86                     </p> <hr/> <p>                         Sample Id : : Gate Innersadda                          1. Heat No : : 123                          2. Key 1 : : Value 1                          3. Key 2 : : Value 2                          4. Key 3 : : Value 3                     </p>	<p style="text-align: center;"><b>Material Test Results</b></p> <p>                         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/mm<sup>2</sup>) : : 194.335                          Total Elongation @ Rupture (mm) : : 42.16                          Elongation % : : 7.193                          Final Gauge Length (mm) : : 642.16                     </p>
 <p style="text-align: center;">                         Stress ( gpa ) vs % Strain                     </p> <p>                         Comment : Some Comment Herre and there                     </p>	
<p>Tested By</p>	<p>Witnessed By</p>
<p>Authorized By</p>	

# Test Reports - Video Extensometer

TENSILE TEST REPORT	
<b>VIDEO EXTENSOMETER - BSRM</b>	
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	
<b>Input Data</b> Test Type : : Tensile Test - Stress Vs Strain Sample Type : Strand File Name : final-bsrm-2	<b>Material Test Results</b>  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
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	
	
Commnet : Some Comment Herre and there	
Tested By	Witnessed By
Authorized By	

# Software Screenshots

Load (kN) Tare

0.000

Disp. (mm) Tare


0.0

Ext. (mm) Tare

0.000


Sync Value

Get Cal.




**Start Sample Test**

Start Sample test as per ASTM / IS / ISO standards.




**Create New Batch**

Test multiple samples in one file




**Calibrate/ Settings**


Calibration of control unit and factory settings




**Results / Datastore**

In-depth analysis of completed tests


Demo Sample Test


Demo New Batch


Exit

Activate Windows  
Go to Settings to activate Windows.

**#1 : Select Graph Type**

Load vs Displacement  Stress vs Strain

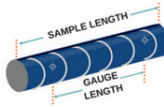
**#2 : Select Extensometer Type**

Clip On EE2  Video Ext.

Yield Str. % EUL   Proof Str. Offset 1 : %   Proof Str. Offset 2 : %

**#3 : Select Sample Type**

Round Solid  Rectangular  Round Hollow  TMT  Strand  Other



Sample Length (mm) :

Weight (Kg) :


Density (gm/cc) :


Gauge Length (mm) :

**Select output unit :**

Load  Stress

N  kN  kGf  lbs


Discard Test


Start Test

Activate Windows  
Go to Settings to activate Windows.

**Test Specifics**

File Name : alpesh-ve-2-gate-inner

Test Type : Load vs Extension

Test Type : Stress vs Strain

Test Speed : 10.0 (mm/min)

Sample Type : Round Solid

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**Select Results to Print**

Max. Load (N) : 6835.351

Ult. Stress (N/mm2) : 222.795

Yield Load (N) : 5033.977

Yield Stress (N/mm2) : 164.080

Proof Stress 0.2 % Offset (N/mm2) : 154.983

Proof Stress 0.5 % Offset (N/mm2) : 169.084

Proof Load 0.2 % Offset (N) : 4754.878

Proof Load 0.5 % Offset (N) : 5187.497

Youngs Modulus (N/mm2) : 22884.809

Total Elongation @ Rupture (mm) : 1.5

% Total Uniform Elongation @ Fmax : 4.889

Total Uniform Elongation @ Fmax (mm) : 1.47

YS/UTS : 0.759

UTS/YS : 1.318

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**Select output unit**

Load  Displacement  Stress

N  kN  kgf  lbs

**Elongation and Area**

Final Gauge Length (mm) : 31.5

Elongation % : 5.000

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**Input Fields**

Gauge Length (mm) :

Outer Diameter (mm) :

---

**Extra Fields**

Key 2	:	Value 2
Key 1	:	Value 1
	:	
	:	
	:	

Sample Type :

Consignee Name :

---

**Edit Yield Load**

New Yield :

---

**Edit Elongation**

Final GL :

Stress vs Strain

Stress (N/mm2-mpa)

% Strain

**Select a window of points**

Start X :

Start Y :

End X :

End Y :

Plot Offset Proof Lines

Yield From Graph - First Drop

ASTM Method - Offset %

Show Method in PDF

Activate Windows  
Go to Settings to activate Windows.

## Control panel Indicator

UNIVERSAL 2020 PLUS

Load (kN)

0.992

STD|20T|C:0|Pk:-0.000kN|H01d:00.0kN

Disp. (mm)

0.1

TARE LOAD

TARE DISP.

FREEZE

START STOP

MODE

UP

SHIFT

DOWN

SET

■