FEMech Engineering

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Tensile Strength & Modulus
FEMech’s State of the Art Instron Testing Machine
Tensile Strength & Modulus
ASTM D638 – Test Ready -- Extensometer Not Yet Active

Tensile Strength & Modulus
FEMech’s State of the Art Video Extensometer
Tensile Strength & Modulus
ASTM D638 Bluehill 2 Test Report

![Tensile Strength & Modulus Graph](image1)

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Load (N)</th>
<th>Tensile strain (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimen 1</td>
<td>1000</td>
<td>1.0</td>
</tr>
<tr>
<td>Specimen 2</td>
<td>1500</td>
<td>1.5</td>
</tr>
</tbody>
</table>

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Tensile Strength & Modulus
ASTM D638 Bluehill 2 Test Report

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Area</th>
<th>Tensile Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimen 1</td>
<td>1.05</td>
<td>12.5</td>
</tr>
<tr>
<td>Specimen 2</td>
<td>1.10</td>
<td>12.0</td>
</tr>
</tbody>
</table>

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![Tensile Strength & Modulus Table](image2)

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Thickness</th>
<th>Width</th>
<th>Area</th>
<th>Tensile Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimen 1</td>
<td>0.5</td>
<td>0.45</td>
<td>0.125</td>
<td>12.5</td>
</tr>
<tr>
<td>Specimen 2</td>
<td>0.55</td>
<td>0.47</td>
<td>0.130</td>
<td>12.0</td>
</tr>
</tbody>
</table>

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![Tensile Strength & Modulus Table](image3)

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Yield Strain</th>
<th>Break Strain</th>
<th>Modulus of Elasticity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimen 1</td>
<td>0.00</td>
<td>0.01</td>
<td>1000</td>
</tr>
<tr>
<td>Specimen 2</td>
<td>0.01</td>
<td>0.01</td>
<td>1001</td>
</tr>
</tbody>
</table>

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![Tensile Strength & Modulus Table](image4)
Flexural Strength & Modulus
FEMech’s State of the Art Instron Machine
Set Up for Flex Testing

Flexural Strength & Modulus
ASTM D790 Test at Point of Failure
Flexural Strength & Modulus
Bluehill 2 Software Screenshot

Flexural Strength & Modulus
ASTM D790 Bluehill 2 Test Report
Flexural Strength & Modulus
ASTM D790 Bluehill 2 Test Report

Parallel Plate
ASTM D2412 – Testing a 30” ∅ FRP Pipe
Parallel Plate
ASTM D2412 – Testing a 12” Ø FRP Pipe

Parallel Plate
ASTM D2412 – Testing a 20” Ø FRP Pipe
RTP-1 Secondary Bond
FEMech’s Instron Machine Set Up for Shear Bond Testing

RTP-1 Secondary Bond
RTP-1 M-5 Secondary Bonder Qualification
RTP-1 Secondary Bond
RTP-1 M-5 Secondary Bond Specimen Before Test

RTP-1 Secondary Bond
RTP-1 M-5 Secondary Bond Specimen After Test
Glass & Resin Content
FEMech’s Ohasus Scale -- Accurate to 0.001 Grams

Glass & Resin Content
FEMech’s Custom Designed Pre-burn Oven
Glass & Resin Content
Programmable Digital Muffle Furnace
Photo Micrography
FEMech’s Amscope Video Microscope

Photo Micrography
FEMech’s Amscope Video Microscope
Photo Microscopy
6.7X Microphotograph of Thin Sliced Laminate

Photo Microscopy
6.7X Microphotograph of Thin Sliced Laminate
Calibration
We Calibrate our Equipment Using Gauge Blocks and Weights Traceable to the National Bureau of Standards
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We Calibrate our Equipment Using Gauge Blocks and Weights Traceable to the National Bureau of Standards

Calibration
We Only Handle Our NBS Blocks and Weights with Gloves