



|                    |   |                       |                  |
|--------------------|---|-----------------------|------------------|
| <b>Report For:</b> | JIMDI Inc.<br>5375 Edgeway Drive<br>Allendale, Michigan<br>U.S.A. 49401<br>Phone: 616-895-7766<br>Fax: 616-895-4946 | <b>Laboratory #:</b>  | <b>530092-09</b> |
| <b>Attention:</b>  | Gary Steroven   | <b>Report Date:</b>   | October 14, 2009 |
| <b>Specimen:</b>   | Sure-Step Docking   | <b>Received Date:</b> | October 9, 2009  |

**TEST REPORT**

**FLEXURAL PROPERTIES**

The baseline flexural properties were determined according to ASTM D7032-07, Section 4.4 and 5.2, and ASTM D6109-05, Method A and Appendix X1 using a load span equal to 1/3 of the support span. The testing parameters are outlined below.

|   |                             |
|---|-----------------------------|
| Testing Position                              | Flatwise                    |
| Sample Size, length x width x nominal depth   | 4 ft. x 11-5/8 in. x 1 in.  |
| Support Span (L)                              | 16 in.                      |
| Support Span to Depth Ratio                   | 16 : 1                      |
| Testing Speed                                 | 0.3375 in./minute           |
| Radius of Support Noses                       | 2 in.                       |
| Radius of Loading Noses                       | 1 in.                       |
| Testing Machine                               | United SFM20                |
| Operating Software                            | Satec Partner Version 2.6c  |
| Deflection Measurement                        | Instron PD-1M Deflectometer |
| Moment of Inertia<br>(Provided by JIMDI Inc.) | 0.235 in. <sup>4</sup>      |

This report is subject to the following terms and conditions: 1. This report relates only to the specimen provided and there is no representation or warranty that it applies to similar substances or materials or the bulk of which the specimen is a part. 2. The content of this report is for the information of the customer identified above only and it shall not be reprinted, published or disclosed to any other party except in full. Prior written consent from Cambridge Materials Testing Limited is required. 3. The name Cambridge Materials Testing Limited shall not be used in connection with the specimen reported on or any substance or materials similar to that specimen without the prior written consent of Cambridge Materials Testing Limited. 4. Neither Cambridge Materials Testing Limited nor any of its employees shall be responsible or held liable for any claims, loss or damages arising in consequence of reliance on this report or any default, error or omission in its preparation or the tests conducted. 5. Specimens are retained 6 months, test reports and test data are retained 7 years from date of final test report and then disposed of, unless instructed otherwise in writing.

**Cambridge Materials Testing Limited**

Per Jill Cook **Quality Assurance**  
Per Chris Giff **Technician**



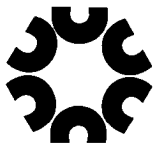
# Cambridge

materials testing limited

1177 Franklin Boulevard,  
Cambridge, Ontario N1R 7W4  
Tel: (519) 621-6600 Fax: (519) 621-6082  
[www.cambridgematerials.com](http://www.cambridgematerials.com)

*ISO 17025 Accredited*

|  |           |
|--|-----------|
| Distance from Neutral Axis to Extreme Fibres<br>(Provided by JIMDI Inc.) | 0.628 in. |
|--|-----------|



### FLEXURAL PROPERTIES (Cont'd)

For each flexural test conducted, the operating software recorded the deflection of the deck board at the mid-span between the supports and the corresponding load. The software calculated the slope of the load-deflection curve between the pre-selected limits corresponding to 10% and 40% of peak load.

The boards were tested at 68±4°F. The rate of loading was such that failure was achieved between 10 seconds and 5 minutes.

The key properties recorded and calculated for each board sample tested were:

**Maximum Load** measured in pounds-force (lbf) – this property was recorded from the load-deflection curve at the point where the maximum load occurred due to rupture or yield, or where the mid-span deflection reached the three percent strain limit.

**Load at L/180** measured in pounds-force (lbf) – this property was recorded from the load-deflection curve at the deflection corresponding to the support span (L) divided by 180.

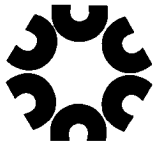
**Modulus of Rupture (MOR)** measured in pounds force per square inch (psi) – this property was calculated using the following equation:

$$\text{MOR} = \frac{(\text{Maximum Load} \times \text{Support Span} \times \text{Distance from Neutral Axis to Extreme Fibres})}{(6 \times \text{Moment of Inertia})}$$

**Slope of Tangent** measured in lbf/in – this property was recorded from the load-deflection curve between 10% and 40% of the peak load.

**Modulus of Elasticity (MOE)** measured in pounds force per square inch (psi) – this property was calculated using the following equation:

$$\text{MOE} = \frac{(\text{Support Span}^3 \times \text{Slope of Tangent})}{(56.25 \times \text{Moment of Inertia})}$$



**FLEXURAL PROPERTIES (Cont'd)**

**RESULTS**

| <b>Sample</b>        | <b>Load at 3% Strain* (lbf)</b> | <b>Load at L/180 (lbf)</b> | <b>MOR* (psi)</b> | <b>Slope of Tangent (lbf/in)</b> | <b>MOE (psi)</b> |
|----------------------|---------------------------------|----------------------------|-------------------|----------------------------------|------------------|
| 1                    | 901                             | 94                         | 6,420             | 979                              | 303,000          |
| 2                    | 913                             | 126                        | 6,510             | 1,032                            | 320,000          |
| 3                    | 887                             | 96                         | 6,320             | 1,029                            | 319,000          |
| 4                    | 910                             | 104                        | 6,480             | 1,019                            | 316,000          |
| 5                    | 914                             | 108                        | 6,510             | 1,038                            | 322,000          |
| <b>Mean</b>          | <b>905</b>                      | <b>106</b>                 | <b>6,448</b>      | <b>1,019</b>                     | <b>316,000</b>   |
| <b>Std. Dev. +/-</b> | <b>11</b>                       | <b>13</b>                  | <b>80</b>         | <b>24</b>                        | <b>7,583</b>     |

\*Notes:

The maximum load (i.e. load at rupture or load at yield) does not occur prior to the 3% strain limit therefore the Modulus of Rupture (MOR) is calculated from the load at 3% strain in accordance with ASTM D7032-07 Section 4.4.1 and ASTM D6109-05 Sections 4.1.2 & 10.1.7.

3% strain occurs at a mid-span deflection of 1.3 in.