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**Laboratory #:** 427785C-06  
REVISION 3  
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**Customer P.O. #:** 613

**Attention:** Derek McGivern

**TEST REPORT**  
**PROPERTIES OF THRUFLOW DECKING PANELS**  
**BASELINE FLEXURAL PROPERTIES**

**1. INTRODUCTION**

On August 24<sup>th</sup>, 2006, CMTL received, a five (5) foot Thruflow Reinforced Polypropylene (RPP) dock panel to determine baseline flexural properties at 73°F as per the request of AXIS Polymer Services Inc.

**2. TEST METHOD**

The baseline flexural properties were determined in accordance with ASTM D6109-05, Method A procedures modified for quarter point loading and ASTM D7032-05, Section 4.4. The testing parameters used for all ASTM D6109-05 tests are outlined below.

Testing Position	Flatwise	Radius of Support Noses	2"
Nominal Sample Size	60" x 12" x 1.25"	Radius of Loading Noses	1"
Support Span	15"	Testing Machine	United SFM20
Support Span to Depth Ratio	12:1	Operating Software	Satec Partner
Testing Speed	0.333 "/minute	Moment of Inertia (I)	0.395 in <sup>4</sup>
		Distance from Neutral Axis (Y)	0.731 in

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Per *Steve Brown* QUALITY ASSURANCE  
Per *Derek Child* TECHNICIAN



## 2. TEST METHOD (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 ultimate stress. A counter number was assigned to each sample tested. This counter number is identified in the results.

Five (5) boards were tested at 73+/-3°F. The key properties recorded and calculated for each board sample tested were:

**Load at Rupture** measured in pounds-force (lbf) – this property was extrapolated from the load-deflection curve at the point where the board samples either ruptured or 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.

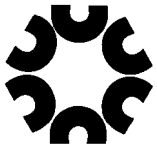
**Modulus of Rupture (MOR)** measured in pounds force per square inch (psi) – this property was calculated using the following equation:

$$\text{MOR} = \frac{(\text{Peak Load} \times \text{Support Span} \times \text{Distance from Neutral Axis})}{(8 \times \text{Moment of Inertia})}$$

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

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

$$\text{MOE} = \frac{(\text{Support Span}^3 \times \text{Slope of Tangent to Load-Deflection Curve} \times \text{Distance from Neutral Axis})}{(34.9 \times \text{Depth} \times \text{Moment of Inertia})}$$



**3. RESULTS**

**15" Support Span**

<b>Sample I.D.*</b>	<b>Counter Number</b>	<b>Load at Rupture (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	19093	2,774	334	9,620	3,113	446,000
2	19095	2,321	329	8,050	2,926	419,000
3	19097	2,714	354	9,420	2,953	423,000
4	19099	2,734	348	9,490	2,980	427,000
5	19101	2,703	337	9,380	2,910	417,000
<b>Mean</b>		<b>2,649</b>	<b>340</b>	<b>9,190</b>	<b>2,976</b>	<b>426,000</b>
<b>Standard Deviation +/-</b>		<b>185</b>	<b>11</b>	<b>645</b>	<b>81</b>	<b>11,600</b>