



Report for: THRUFLOW
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Customer P.O. #: 613

Attention: Derek McGivern

TEST REPORT
PROPERTIES OF THRUFLOW DECKING PANELS
FLEXURAL PROPERTIES AT ELEVATED TEMPERATURES

1. INTRODUCTION

On August 24th, 2006, CMTL received, a four (4) foot Thruflow Reinforced Polypropylene (RPP) dock panel to determine flexural properties at 126°F as per the request of AXIS Polymer Services Inc.

2. TEST METHOD

The 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	48" x 12" x 1.25"	Radius of Loading Noses	1"
Support Span	16"	Testing Machine	United SFM20
Support Span to Depth Ratio	12.8:1	Operating Software	Satec Partner
Testing Speed	0.378 "/minute	Moment of Inertia (I)	0.395 in ⁴
		Distance from Neutral Axis (Y)	0.731 in

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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 126+/-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

16" Support Span

Sample I.D.	Counter Number	Load at Rupture (lbf)	Load at L/180 (lbf)	MOR (psi)	Slope of Tangent (lbf/in)	MOE (psi)
1	19115	1,883	226	6,970	2,222	386,000
2	19117	1,334	251	4,940	1,978	344,000
3	19119	1,736	239	6,430	1,973	343,000
4	19123	1,720	244	6,370	1,920	334,000
5	19125	1,355	237	5,020	2,009	349,000
Mean		1,606	239	5,950	2,020	351,000
Standard Deviation +/-		247	9	913	117	20,200