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WSTC Reference #:ThruFlow0609-1

## **REPORT**

### **Load Capacity Testing of ThruFlow™ Decking Panel**

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## PREFACE

The University of New Brunswick Wood Science and Technology Centre (WSTC) has been assessed under the authority of the *Standards Council of Canada Act* and found to comply with the requirements of ISO/IEC 17025 and other conditions established by the Standards Council of Canada. WSTC is recognized as an *Accredited Testing Laboratory* for specific tests or types of tests listed in our scope of accreditation approved by the Standards Council of Canada. For the current status of our laboratory and scope of accreditation visit [www.scc.ca](http://www.scc.ca), accredited laboratory number 108.

## 1.0 INTRODUCTION

AXIS Polymer Services, on behalf of ThruFlow™, has requested that the Wood Science and Technology Centre (WSTC) conduct load capacity testing on injection moulded deck perforated deck panels.

## 2.0 TEST MATERIALS

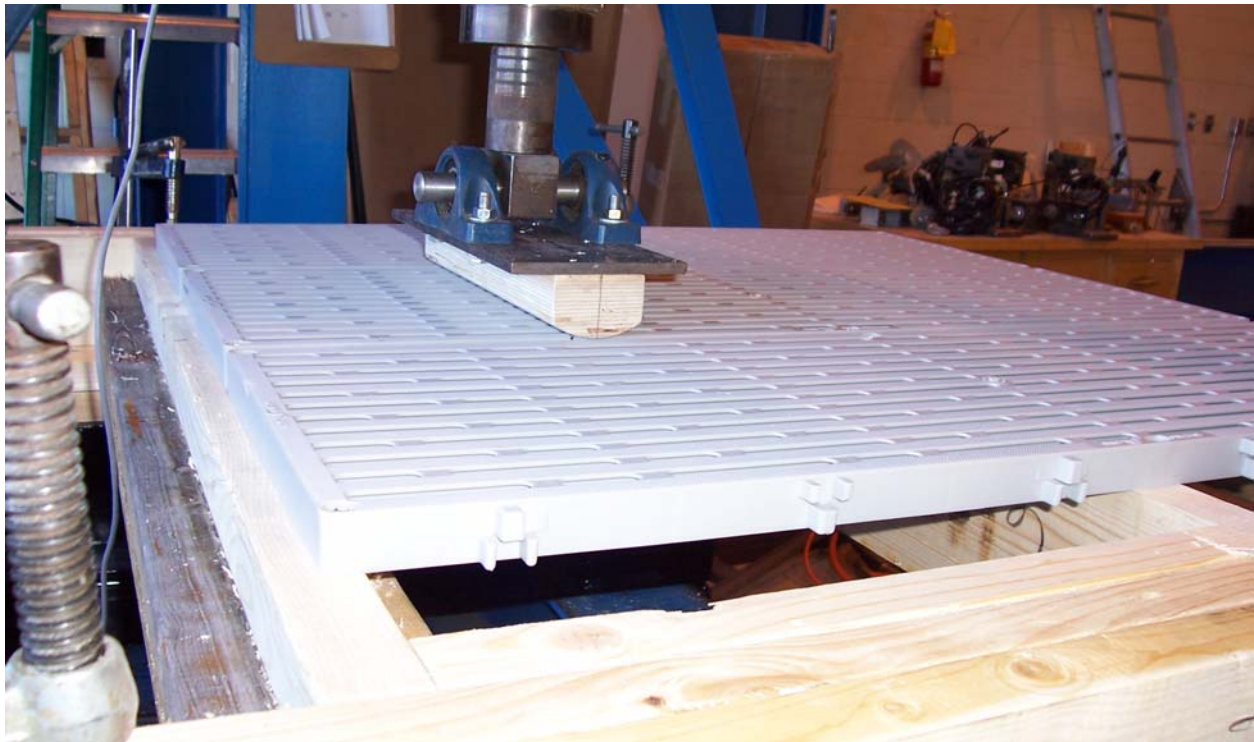
The test material was sent to us by Thru-Flow, login number of 6287 on 2006-09-11. Three different product sizes were tested, each product had a thickness of one and three sixteenths of an inch and a width of 11.5 inches. The lengths were five, four and three feet with each having different mounting support spans. Fasteners for mounting the planks were pan-head steel two and a half inch screws.

## 3.0 TESTING

### 3.1 Bending Test Frame

Load Capacity tests were conducted using a single span wood frame. traditional wood deck. Each deck had three panels mounted to it with the center panel the intended test piece as shown in Picture. 1. The loading head was machined from laminated veneer lumber to have a four inch diameter loading surface and length of 11.5 inches. The bending test frame had a load rate of four mm/min and recorded both cross-head movement and force.

**Picture. 1**



### 3.2 Load Capacity Results

The load-deflection curves for the samples tested are shown in Charts 1-6. The point on the curves at which the panel could no longer support the load was recorded as the Load Capacity and Deflection at Failure. These values are provided in Table 1.

**Table 1.**

Date Tested: September 12, 2006

ThruFlow Panel	Support Span inches (mm)	Replicate	Load Capacity		Deflection at Failure	
			lbf	kN	inches	mm
3'	18" ( 457)	1	1567	6.97	1.00	25.52
		2	1491	6.63	1.14	28.91
		<b>Average</b>	<b>1529</b>	<b>6.80</b>	<b>1.07</b>	<b>27.22</b>
4'	16" ( 406 )	1	1457	6.48	0.81	20.68
		2	1437	6.39	0.69	17.46
		<b>Average</b>	<b>1447</b>	<b>6.44</b>	<b>0.75</b>	<b>19.07</b>
5'	15" ( 381 )	1	1915	8.52	0.98	24.98
		2	1828	8.13	1.01	25.55
		<b>Average</b>	<b>1872</b>	<b>8.33</b>	<b>0.99</b>	<b>25.27</b>

**Chart 1.**

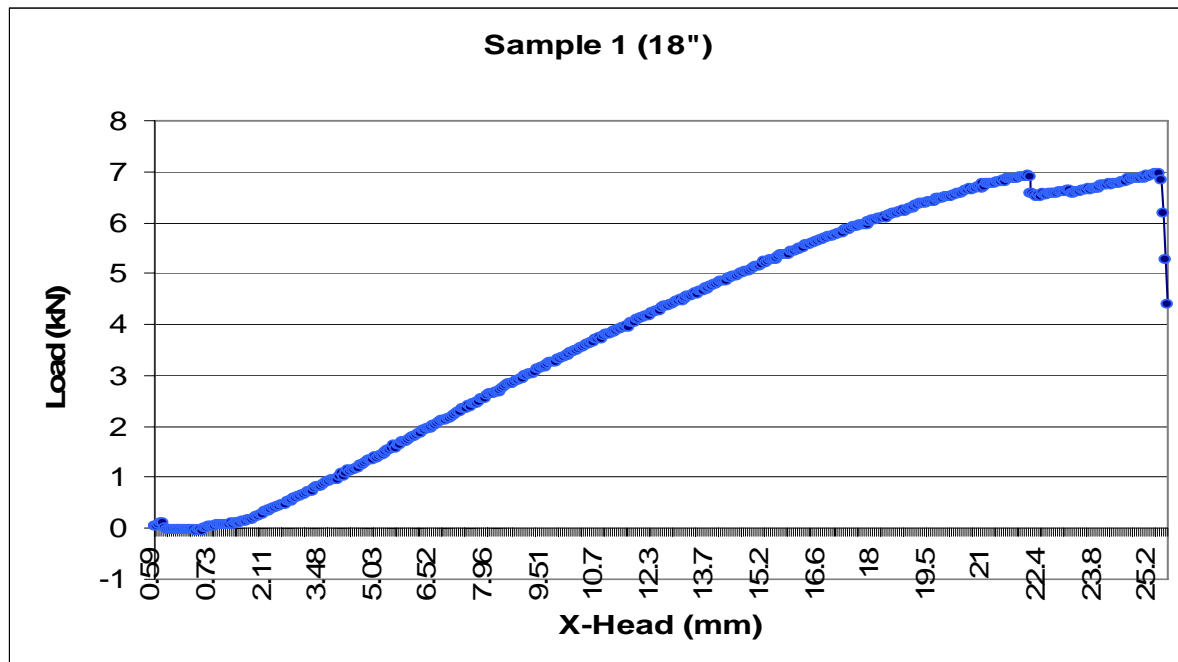


Chart 2.

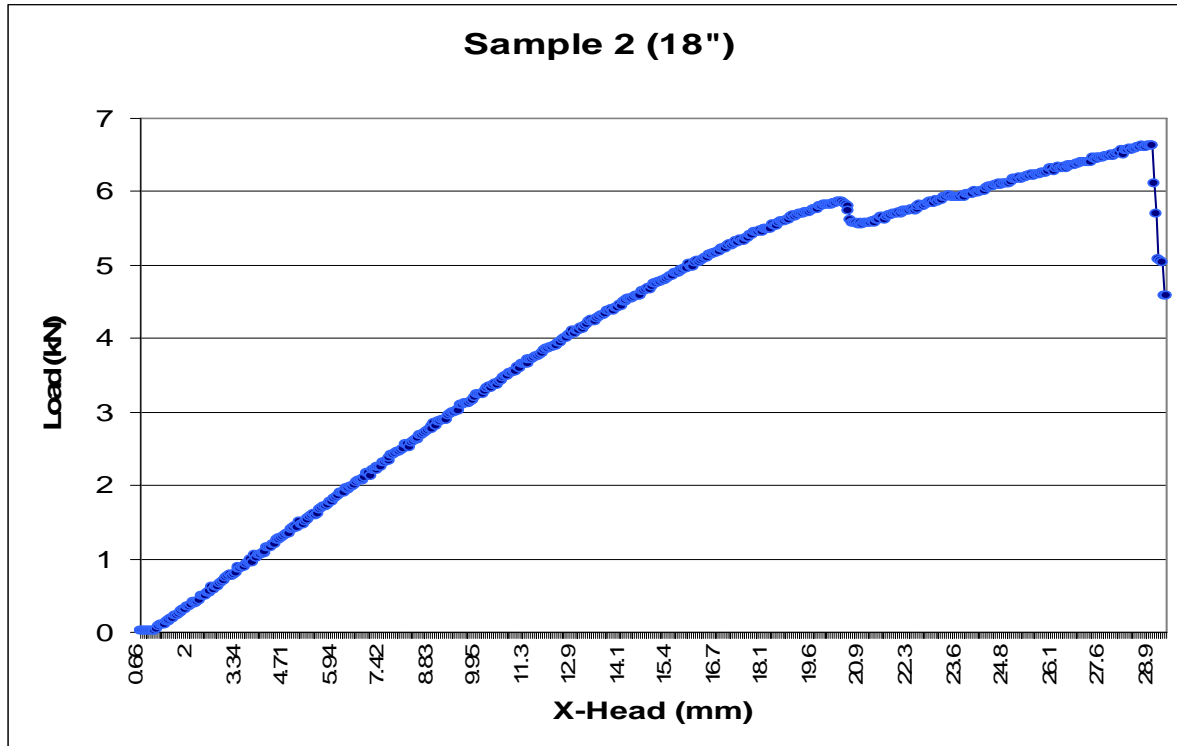


Chart 3.

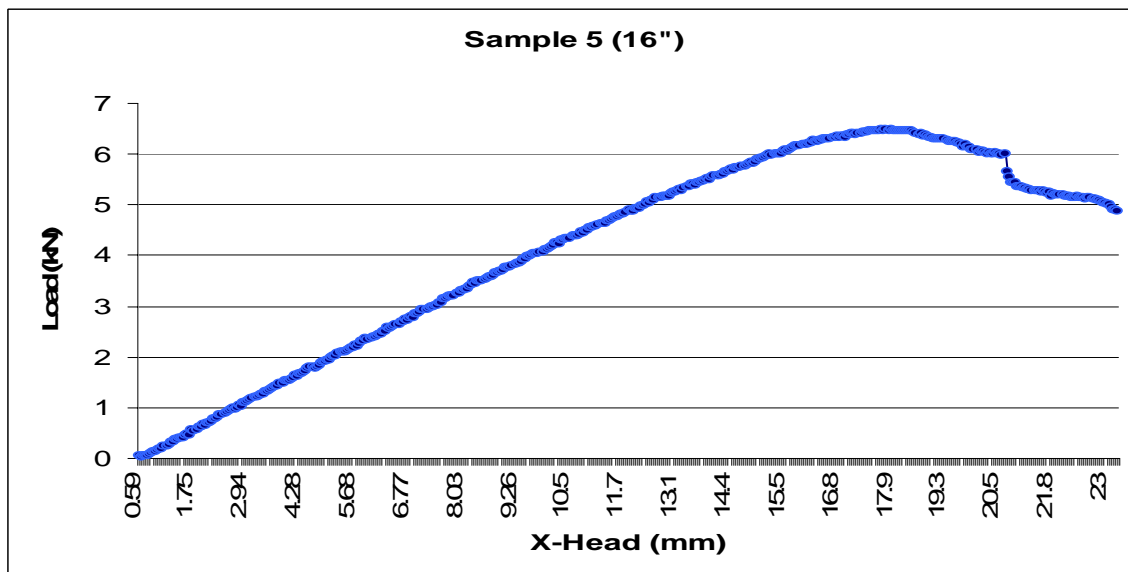


Chart 4.

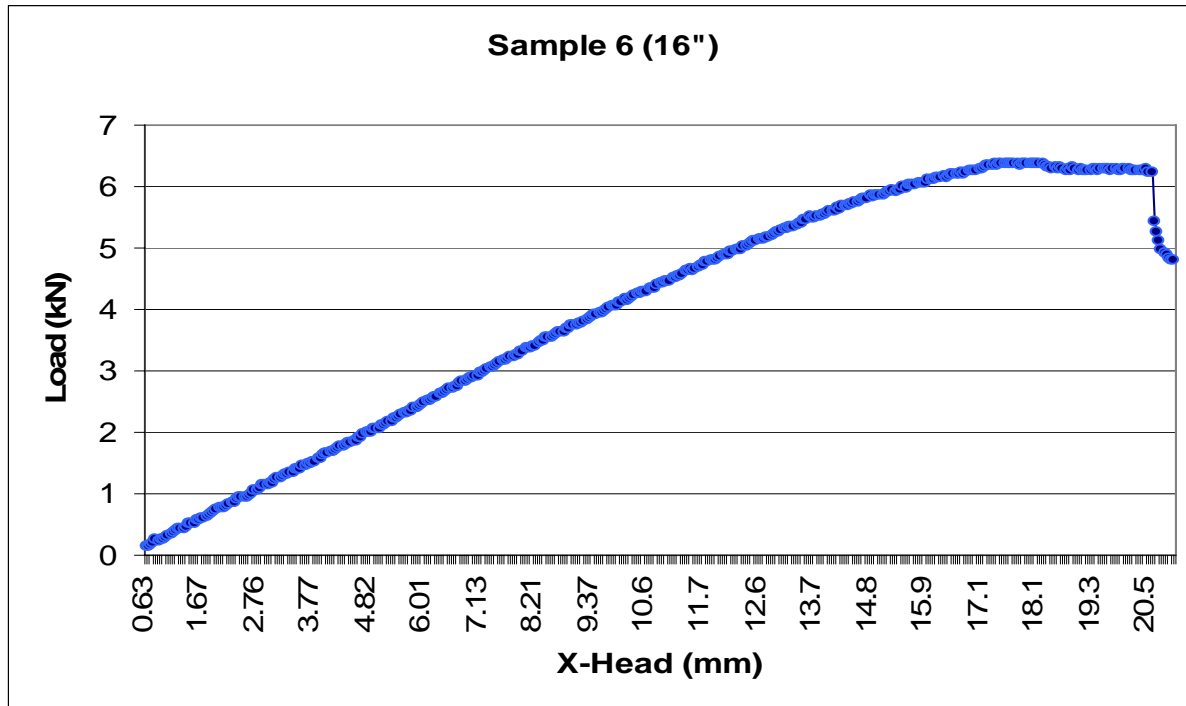
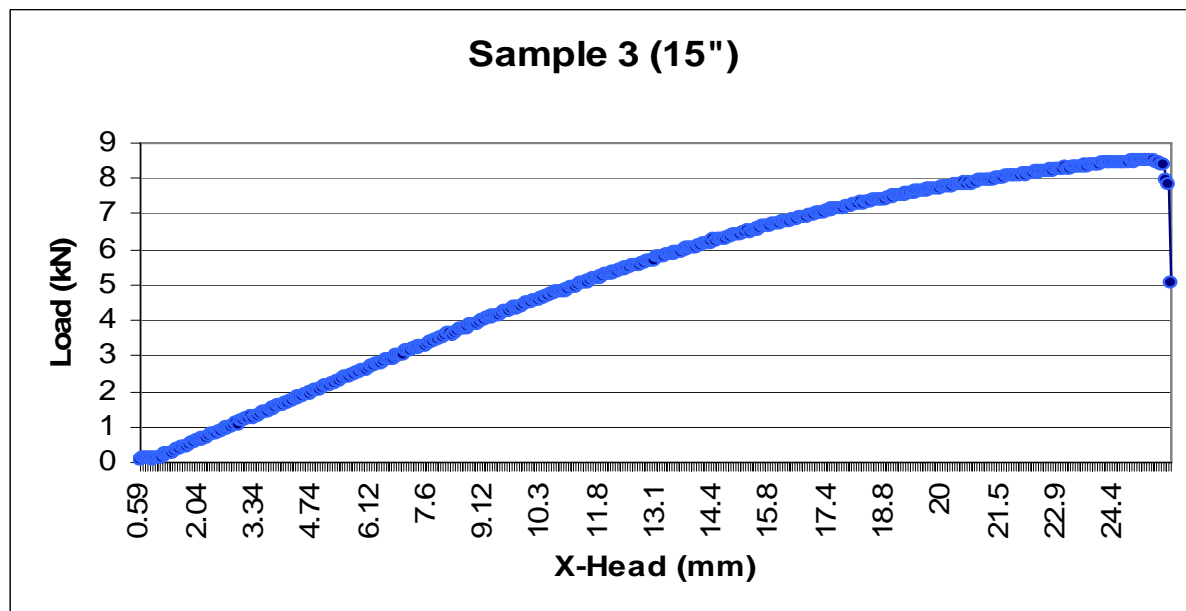
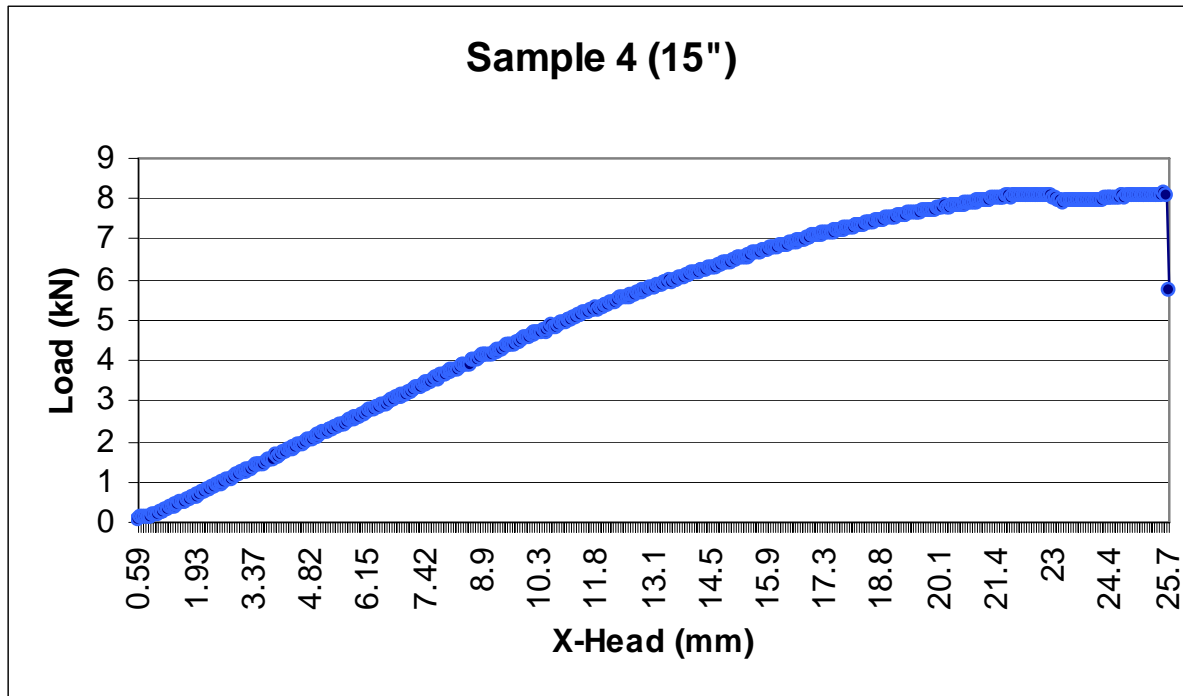


Chart 5.



**Chart 6.**



**Table A1 - Test Equipment and Calibration Information**

Equipment	Asset No.	Capacity	Calibrated	Accuracy
Mayer	020-1	100 kN	May. 17/06	± 1%