

INTERMODAL MATERIÉL  
AND  
NAUTICAL/NUCLEAR ANALYSIS  
**IMANNA**  
LABORATORY INC.

# CERTIFICATION TEST REPORT

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CERTIFICATION TEST REPORT 15050-1  
OF  
MECHANICAL STRENGTH TESTS  
ON  
6-INCH SLIMLINE CLEATS  
FOR  
ACCON MARINE, INC.

**CUSTOMER:**

ACCON MARINE, INC.  
13665 AUTOMOBILE BLVD.  
CLEARWATER, FL 34622

**MANUFACTURER**  
**OF TEST ARTICLE:** Accon Marine, Inc.

**REPORT NO.:** 15050-1  
**IMANNA JOB NO.:** 15050  
**CUSTOMER P.O. NO.:** VERBAL  
**CONTRACT:** N/A  
**PAGES IN REPORT:** 7

**DATE:** April 19, 2000

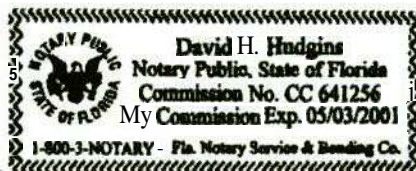
**STATE OF FLORIDA**

ROBERT L. WHITE, being duly sworn, deposes and says The information contained in This report is the result of complete and carefully conducted tests and IB to the best of his knowledge true and correct in all respects

*Robert L. White*

SUBSCRIBED and sworn to before me this 19th day of April, 2000

*David H. Hudgins*



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IMANNA LABORATORY, Inc.  
**TEST BY**  
Robert L. White  
**PROJ ENGINEER**

1. SPECIMEN

Six samples of 6-inch Slimline cleats were received for test.

2. REQUIREMENTS

The Requirements for this effort are to perform vertical pull tests on the received samples.

3. PROCEDURES

Each cleat was mounted to a 3/4" thick steel plate in the manner it would be mounted on a boat. The cleats were then subjected to an increasing vertical load to determine the first sign of bending and its ultimate load capability in the direction of pull.

4. RESULTS

CLEAT SIZE	SAMPLE	LOAD AT INITIAL DEFORMATION (LBS)	MAX. LOAD (LBS)	COMMNTS
6"	1	3,051	4,700	BOTTOMSIDE PHILLIPS SCREW HEAD BROKE OFF
	2	N/A	N/A	STRIPPED MOUNTING BOLT DURING INSTALLATION
	3	3,146	4,341	BOTTOMSIDE PHILLIPS SCREW HEAD BROKE OFF
	4	2,823	4,114	BOTTOMSIDE PHILLIPS SCREW HEAD BROKE OFF
	5	2,253	4,194	BOTTOMSIDE PHILLIPS SCREW HEAD BROKE OFF
	6	2,838	4,685	BOTTOMSIDE PHILLIPS SCREW HEAD BROKE OFF
	<b>AVERAGE--&gt;</b>	2,222	4,407	

5. OBSERVATIONS AND COMMENTS

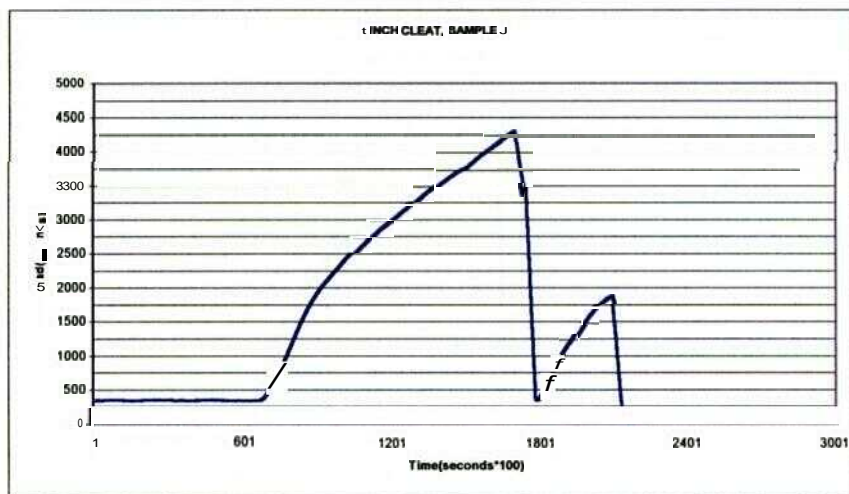
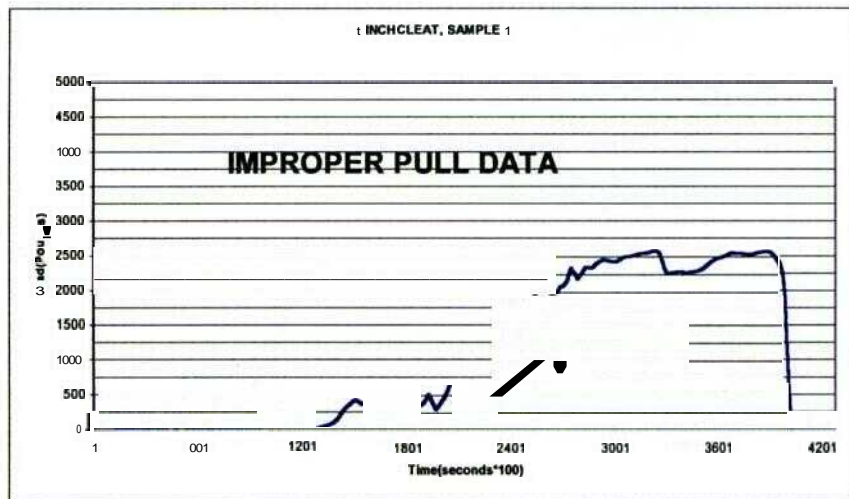
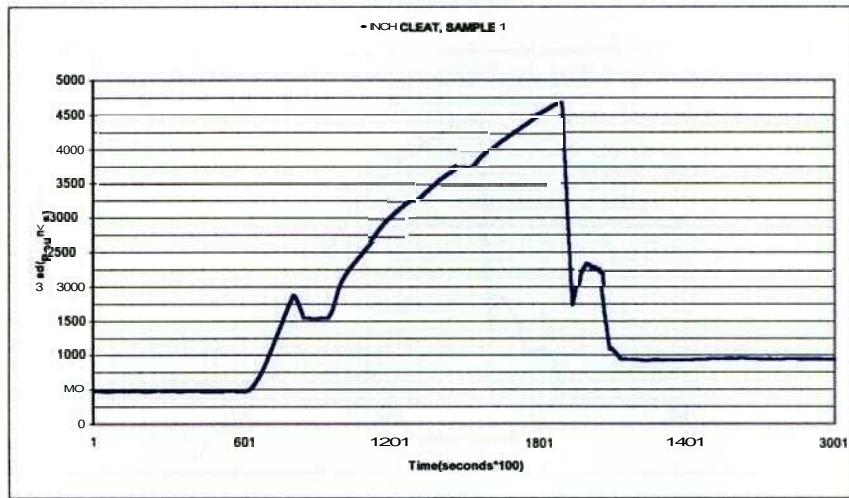
The typical first observed deformation appeared to be when the entire cleat-mounting base lifted up from the steel plate it was mounted to. Although this deformation occurred at an average of 50% of the Ultimate Failure load, it did not appear to significantly contribute to the ultimate failure of the system.

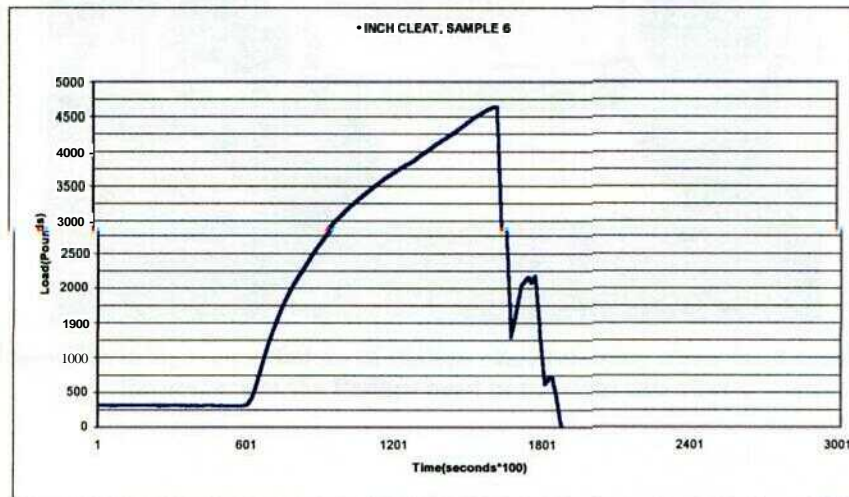
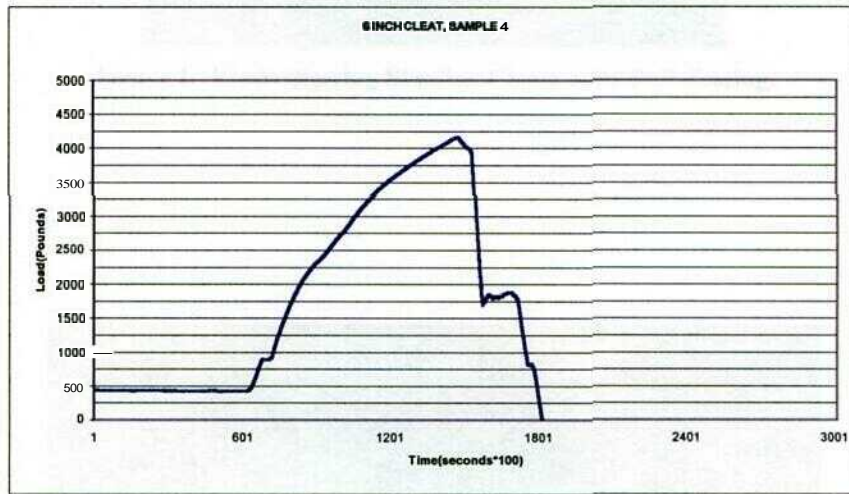
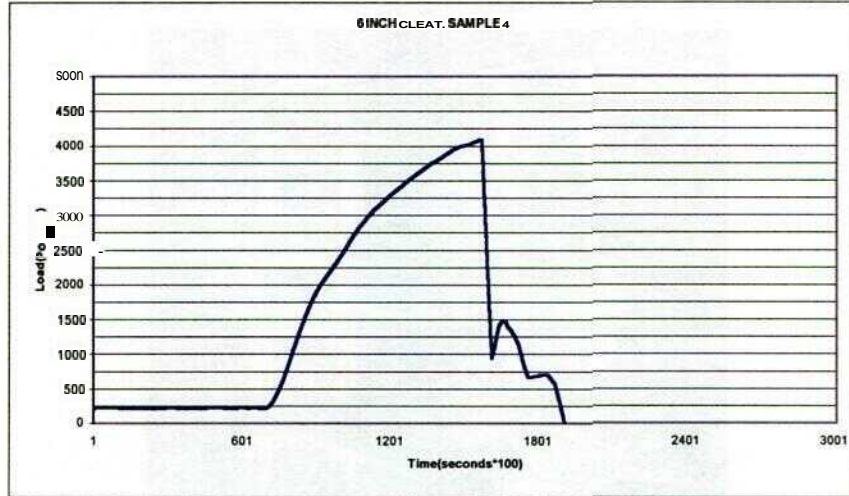
The typical ultimate failure was when one the Phillip's heads of the two cleat-retaining screws broke off(See Figure 2). Once this head broke off, the cleat retaining system became **unsymmetrical** and thus weakened the cleat system.

The results presented herein apply only to the test article as prepared and as tested. All equipment used in the performance of these tests was calibrated to standards traceable to the N.I.S.T.

**APPENDIX**

6 INCH CLEATS







**Figure 1. Photo showing Slimline Cleats after Pull Testing,**



**Figure 2. Close-up showing typical failure of Phillips cleat-retaining screw head breaking off. Note the absence of the Phillips head in the right side sleeve.**