

INTERMODAL MATERIÉL
AND
NAUTICAL/NUCLEAR ANALYSIS
IMANNA
LABORATORY INC.

CERTIFICATION TEST REPORT

515 Gus Hipp Blvd
Rockledge, Florida 32955
Telephone (321) 632-2008
http://www.imanna.com

Post Office Box 560933
Rockledge, Florida 32956-0933
FAX (321) 690-3360
E-mail: imannalab@bellsouth.net

TEST REPORT
17080-1
MECHANICAL STRENGTH TESTS
ON
SURFACE MOUNT POP-UP CLEATS
FOR
ACCON MARINE, INC.

CUSTOMER:

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

MANUFACTURER
OF TEST ARTICLE: ACCON MARINE, INC.
CLEARWATER, FL 34622

REPORT NO.: 17080-1
IMANNA JOB NO.: 17080
CUSTOMER P.O. NO.: N/A
CONTRACT: N/A
PAGES IN REPORT: 5

DATE: JAN 31, 2006

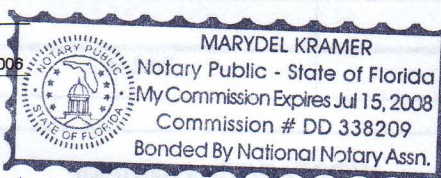
STATE OF FLORIDA

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 is to the best of his knowledge true and correct in all respects.

Robert L. White

SUBSCRIBED and sworn to before me this 31st day of January, 2006

Marydel Kramer



Imanna shall have no liability for damages of any kind to person or property, including special or consequential damages resulting from Imanna's providing the service covered by the report.

IMANNA LABORATORY, Inc.

TEST BY

Robert White
PROJ. MANAGER

1. TEST ARTICLE

Two samples of three of Accon Marine's stainless steel Surface Mount Pop-Up Cleats were received for test.

2. MODEL NUMBER / DESCRIPTION

450 - 4 4 1/2" Pop-Up Cleat

450 - 6 6" Pop-Up Cleat

450 - 6 8" Pop-Up Cleat

3. REQUIREMENTS

The requirements for this effort are to perform side pull tests on the received samples. The test is to be continued until the breaking strength of the cleats has been determined.

4. 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 side load to determine the point of significant bending and/or ultimate load capability (whichever occurs first) in the direction of pull. All pulls were performed in the "side" direction and not the lifting direction. Mounting hardware is supplied with the cleats. IMANNA utilized the supplied mounting hardware for the purpose of the tests.

5. RESULTS

The following table contains the values obtained during the tests. In addition to the failures each of the tested samples also experienced some deformation as a result of the tests.

4 1/2" Cleats		
SAMPLE #	MAX LOAD (lbs)	FAILURE MODE
1	3,600	POP-UP LEGS BROKE
2	4,000	PULLING ROPE BROKE
2 (REPEAT)	5,000	POP-UP LEG BROKE
AVERAGE	4,300	
6" Cleats		
SAMPLE #	MAX LOAD (lbs)	FAILURE MODE
1	6,900	POP-UP LEG BENT
2	6,230	POP-UP LEG BENT
AVERAGE	6,565	

8" Cleats		
SAMPLE #	MAX LOAD (lbs)	FAILURE MODE
1	7,100	POP-UP LEGS BROKE
2	6,700	POP-UP LEGS BROKE
AVERAGE	6,900	

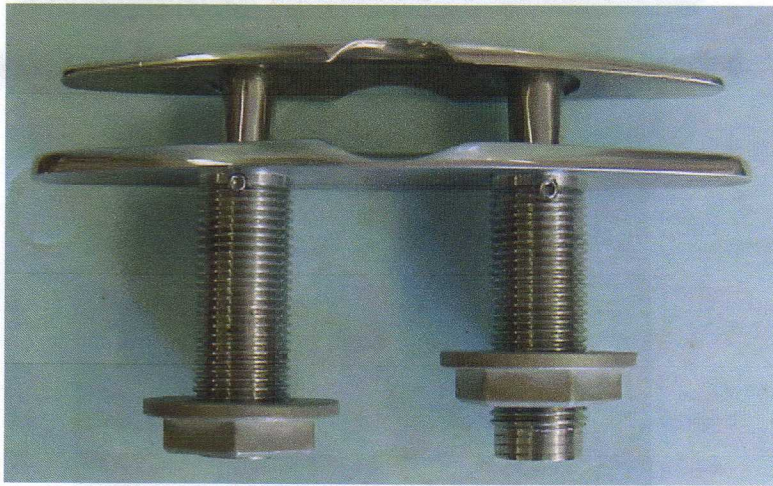


Figure 1. 6" Pop-Up Cleat Sample 1; typical failure mode (pop-up leg bending).

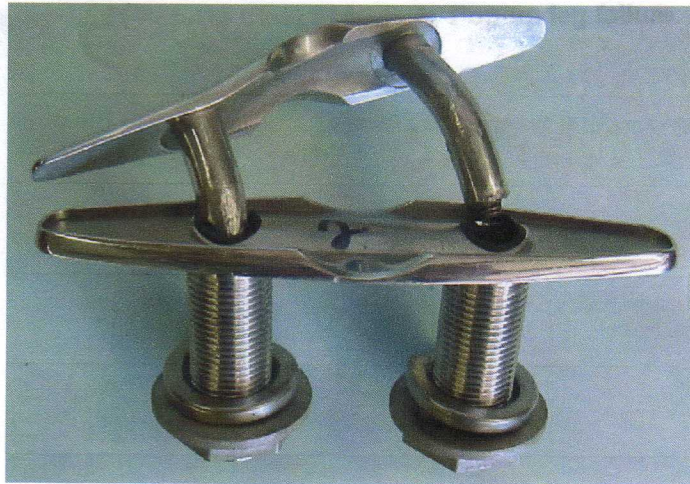


Figure 2. 6" Pop-Up cleat Sample 2; typical failure mode (pop-up leg break).

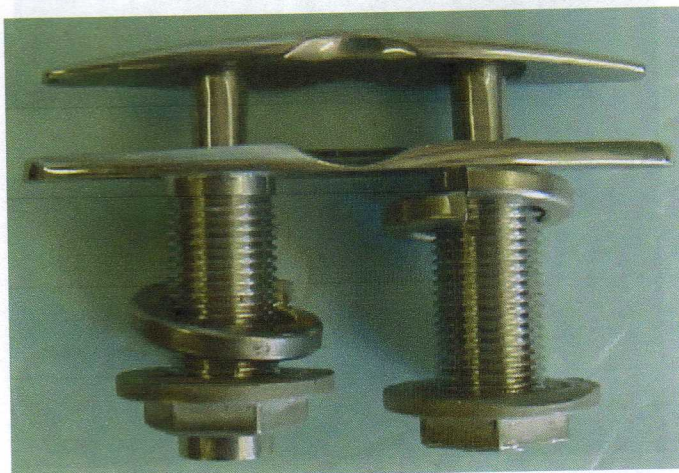


Figure 3. 4" Pop-Up cleat Sample No. 4 Pop-Up mleg bending.



Figure 4. 4" Pop-Up Cleat Sample 4. Pop-up leg failure.

5. OBSERVATIONS AND COMMENTS

The results of the tests herein report the failure of the test articles to determine failure possibility. The test article failures observed do not represent inferiority of the product in a product acceptance or use environment.

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 NIST.

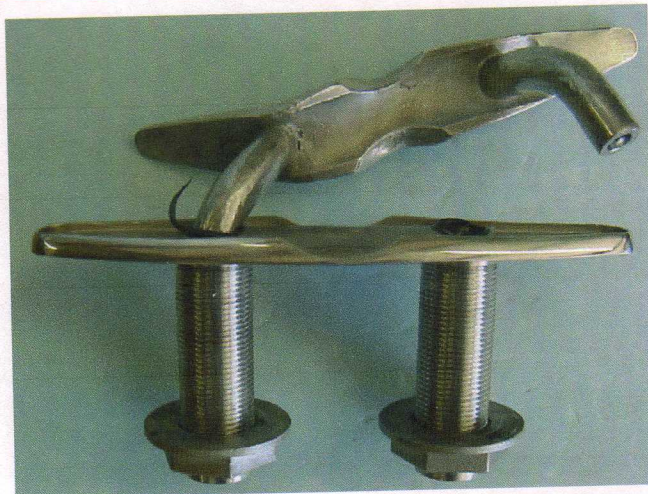


Figure 5. 8" Pop-Up Cleat Sample 5. Pop-Up leg failure.

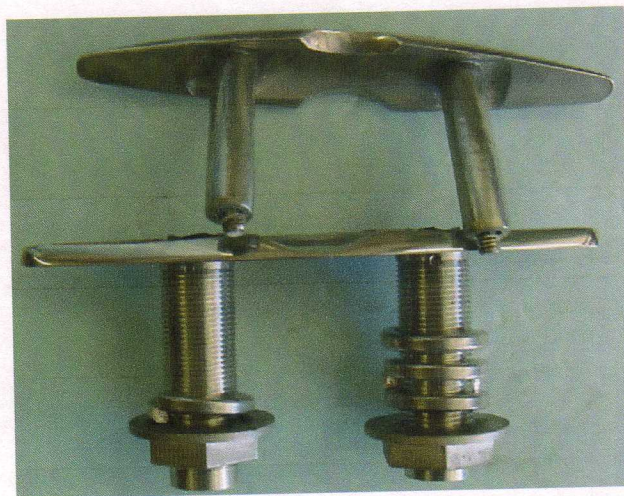


Figure 6. 8" Pop-Up Cleat Sample 6. Pop-Up leg failure.

6. OBSERVATIONS AND COMMENTS

The results of the tests herein record the failure of the test articles to determine rating acceptability. The test article failures recorded do not represent inferiority of the product in a product acceptance or use environment.

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.

