

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: info@imanna.com

TEST REPORT
20027-2
MECHANICAL STRENGTH TEST
OF
10" POP-UP CLEATS
FOR
ACCON MARINE, INC.

CUSTOMER:

ACCON MARINE, INC.
13665 AUTOMOBILE BLVD.
CLEARWATER, FL 33762

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

DATE: July 8, 2014

REPORT NO.: 20027-2
IMANNA JOB NO.: 20027
CUSTOMER P.O. NO.: Verbal
CONTRACT: N/A
PAGES IN REPORT: 6

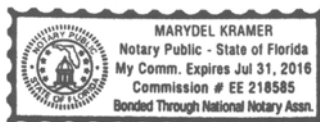
STATE OF FLORIDA

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 8th day of July, 2014

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

Five samples of an Accon Marine 10" stainless steel Pop-Up Cleat were received for test.

2. MODEL / DESCRIPTION

10" Pop-Up Cleat / backing plate

3. REQUIREMENTS

The requirements for this effort are to perform mechanical strength tests on the received samples. The cleats are to be subjected to initial bending strength and breaking strength testing. Testing was conducted with a load applied perpendicular to and parallel to the cleat as mounted to a boat deck.

4. PROCEDURES

Each cleat with the backing plate was mounted to a 1/2" thick steel plate in the manner consistent with how it would be mounted on a boat. Two of the cleats were subjected to an increasing side load (perpendicular to mount) to determine the point of initial bending and the ultimate load capability in the direction of pull. Three of the cleats were subjected to an increasing lateral load (parallel to mount) to determine the point of initial bending and the ultimate load capability in the direction of pull. The mounting hardware used in the testing was supplied with the cleats.

5. RESULTS

The following table contains the values obtained during the tests. Each of the tested samples experienced major deformation as a result of the tests. The tests demonstrate that the cleats ultimate load potential is greater than the breaking strength of line sized to fit the cleats.

10" Cleat / perpendicular loading			
Sample #	Initial Bending (lbs)	Max Load (lbs)	Failure Mode
1**	3,500-4,000	35,000	deformation
2*	3,500-4,000	28,000	deformation
10" Cleats / parallel loading			
Sample #	Initial Bending (lbs)	Max Load (lbs)	Failure Mode
3	8,000-12,000	25,500	spar snapped ***
4	8,000-12,000	23,000	spar snapped ***
5	8,000-12,000	22,000	spar snapped ***

* force applied around spar ** force applies through center of spar

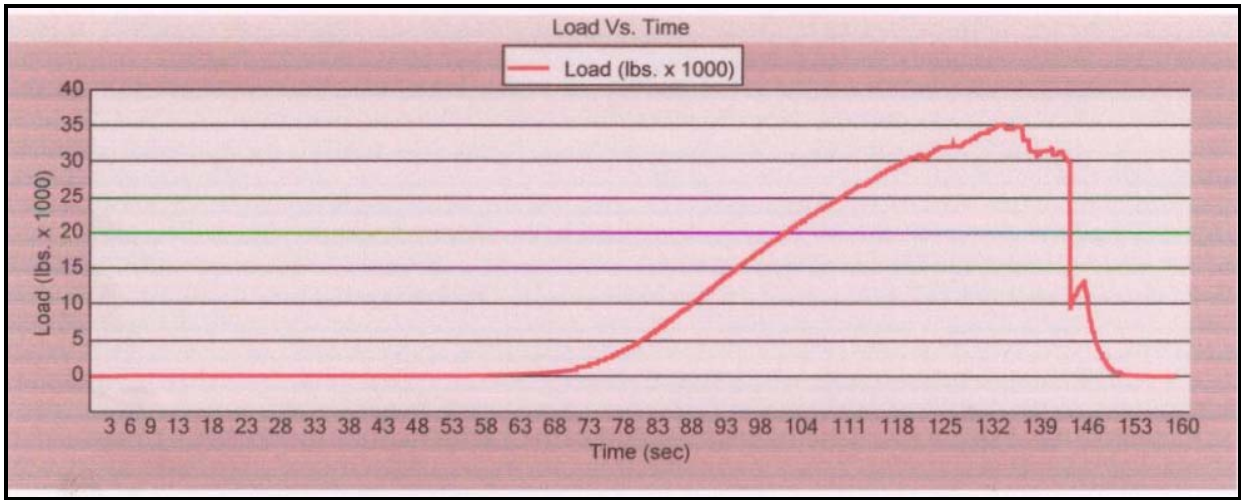
*** representative photo appended

6. OBSERVATIONS AND COMMENTS

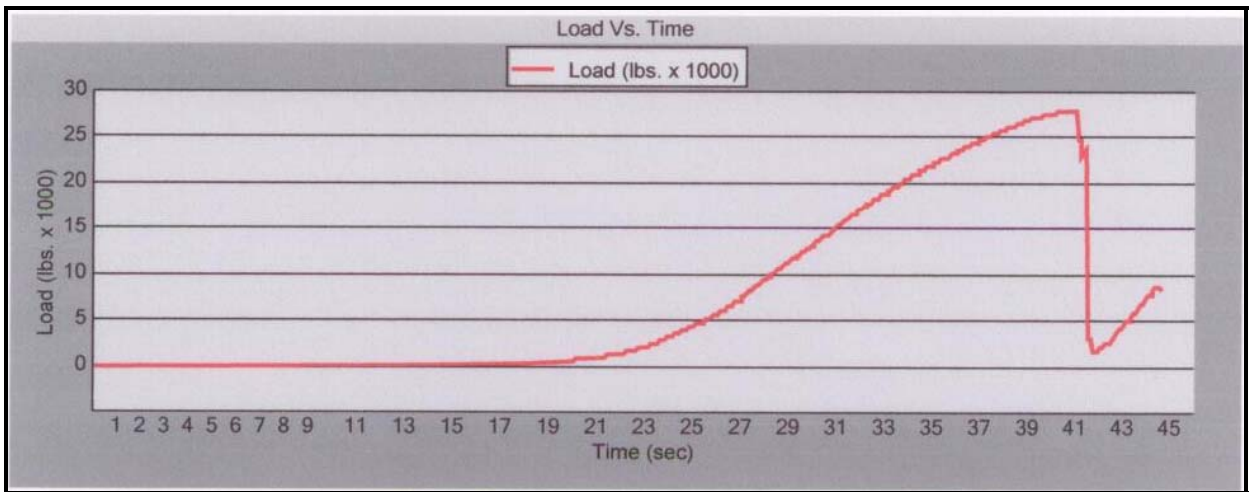
The results presented herein apply only to the test articles as prepared and as tested on the date reported. All equipment used in the performance of these tests was calibrated to standards traceable to the N.I.S.T and/or verified at the time of the test using internationally recognized methods to validate the accuracy and repeatability of the values recorded or collected during the tests. A photo of the cleats following the tests and plots of each test are appended.

Appendix

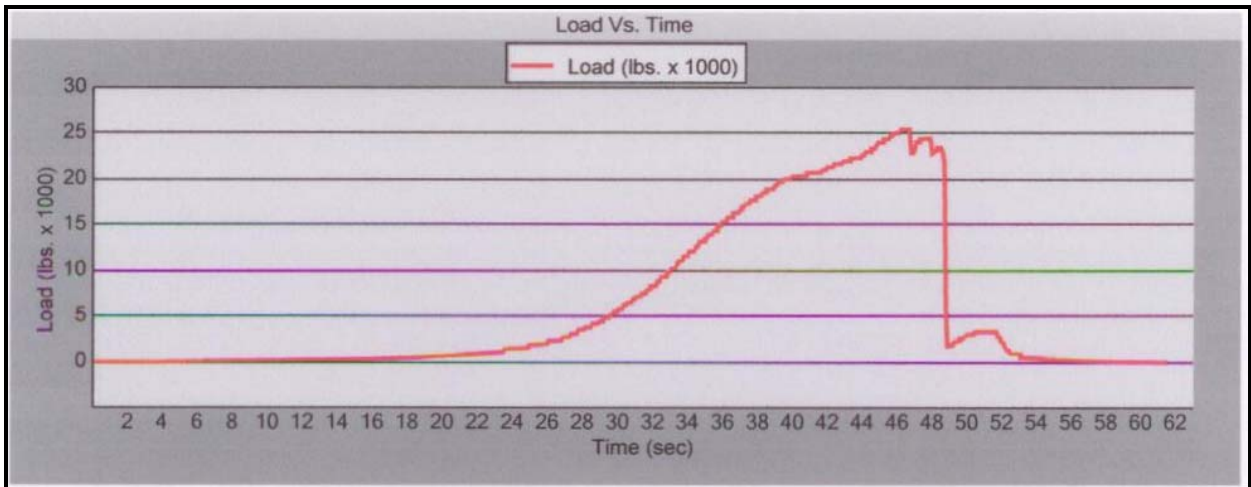
Supporting Data



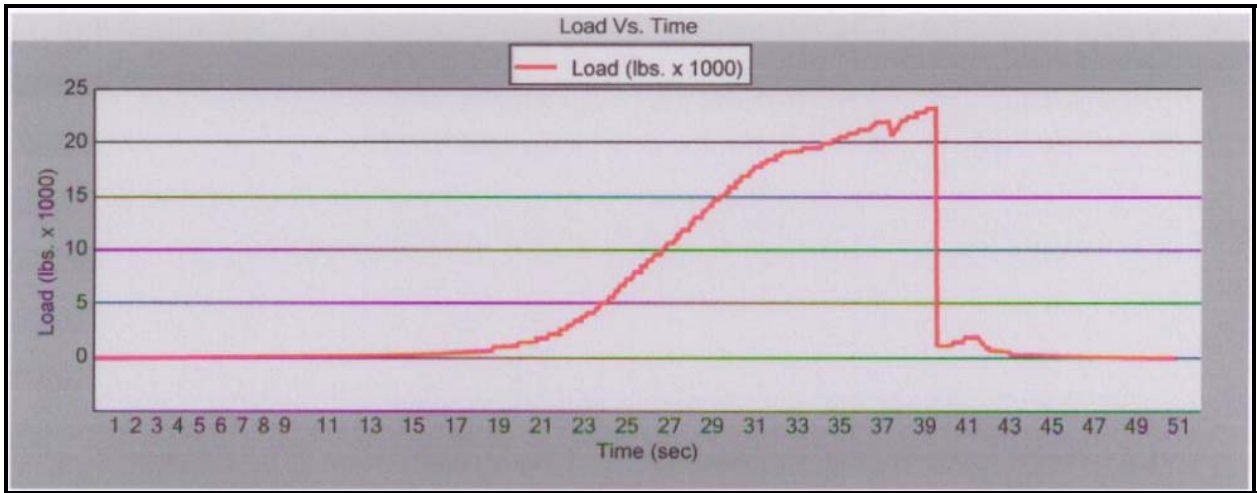
Sample: 1



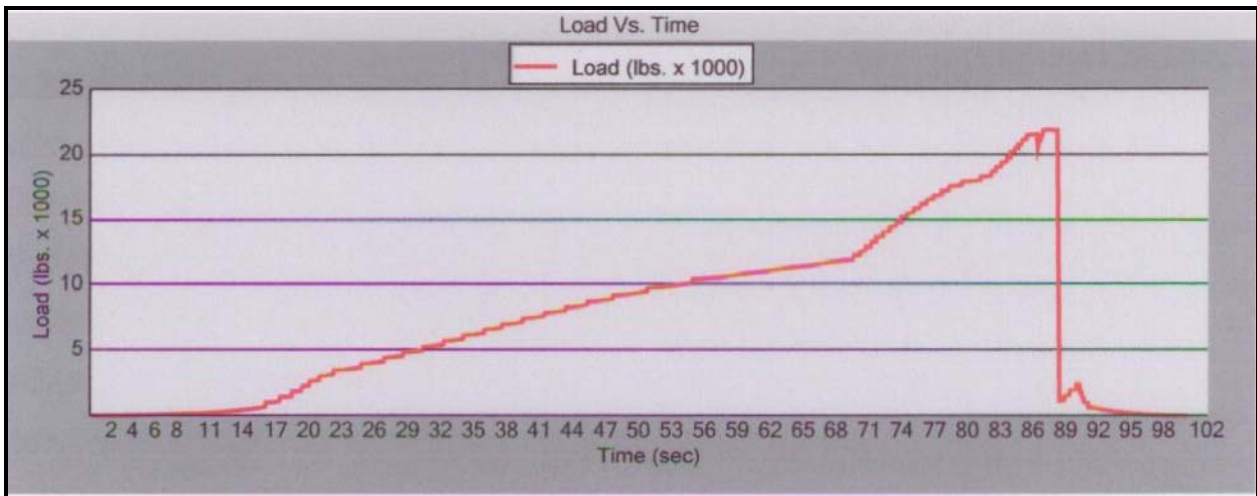
Sample: 2



Sample: 3



Sample: 4



Sample: 5



typical spar break – parallel pull