

INTERMODAL MATERIÉL
AND
NAUTICAL/NUCLEAR ANALYSIS
IMANNA
LABORATORY INC.

CERTIFICATION TEST REPORT

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TEST REPORT
19901-1
MECHANICAL STRENGTH TEST
OF
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: Dec. 24, 2013

REPORT NO.: 19901-1
IMANNA JOB NO.: 19901
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 24th day of December, 2013

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

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

2. MODEL / DESCRIPTION

6" 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 3/8" thick steel plate in the manner consistent with how it would be mounted on a boat. Three 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 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. In addition to the failures each of the tested samples also experienced some deformation as a result of the tests.

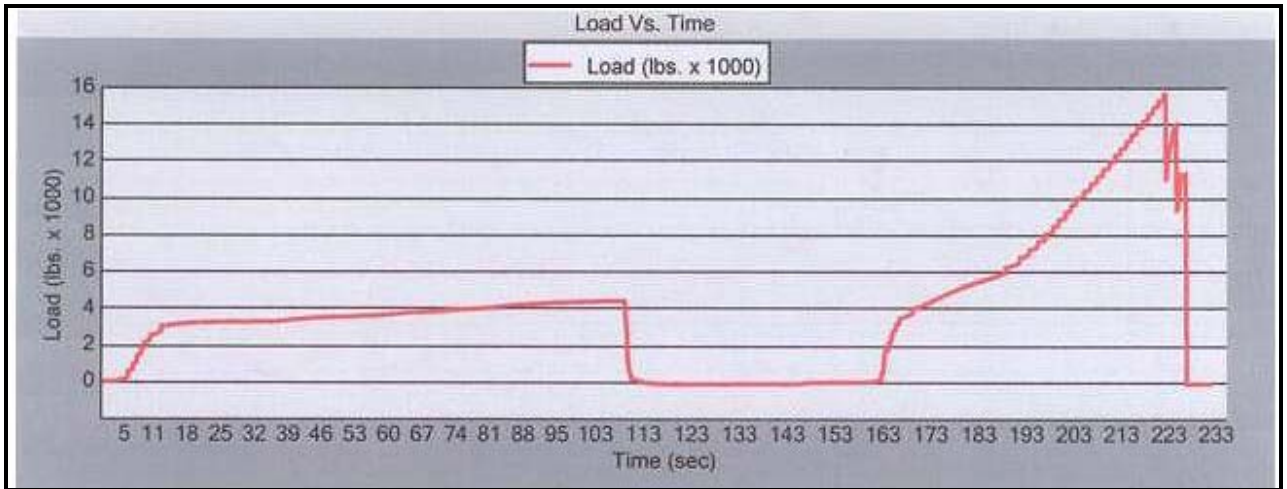
6" Cleat / perpendicular loading			
Sample #	Initial Bending (lbs)	Max Load (lbs)	Failure Mode
1	2,500 to 4,250	15,700	studs
2	2,200	10,300	studs
3	2,000 to 2,500	11,750	stud
6" Cleats / parallel loading			
Sample #	Initial Bending (lbs)	Max Load (lbs)	Failure Mode
4	2,750 to 4,500	11,690	stud screw
5	2,500 to 4,000	9,270	cleat center
6	2,250 to 4,500	9,970	stud screw

6. OBSERVATIONS AND COMMENTS

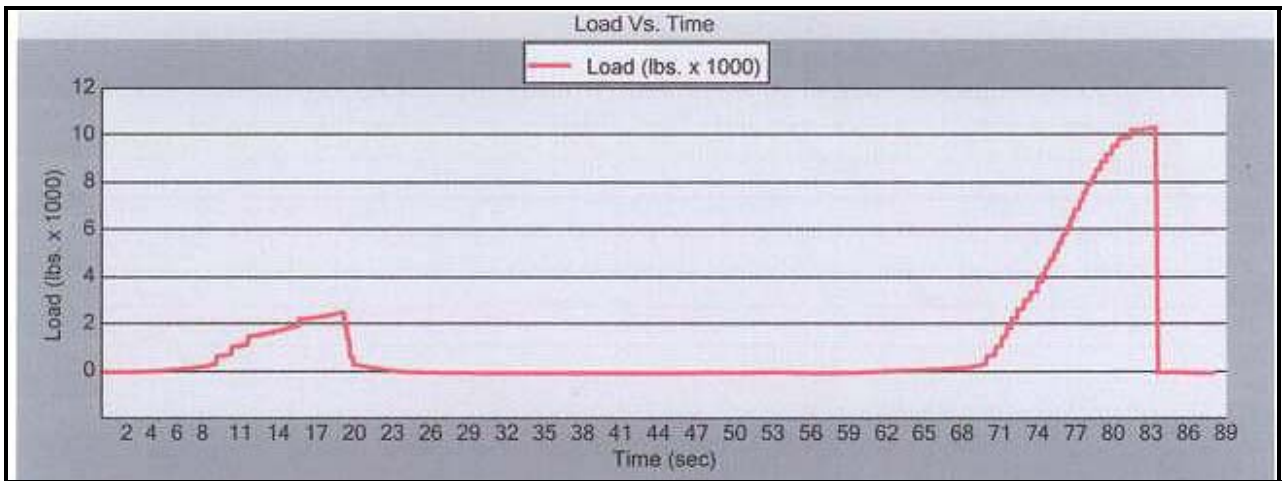
The results presented herein apply only to the test specimen as prepared and as tested on the date reported. All equipment used in the performance of these tests was calibrated to standards traceable to the N.I.S.T and/or verified at the time of the test using internationally recognized methods to validate 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



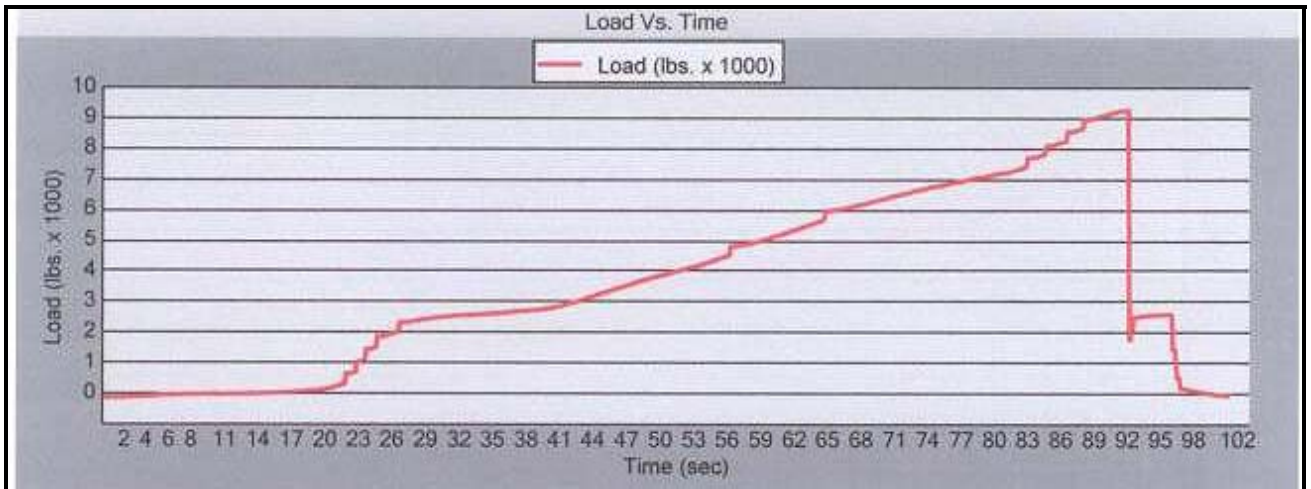
Sample: 2



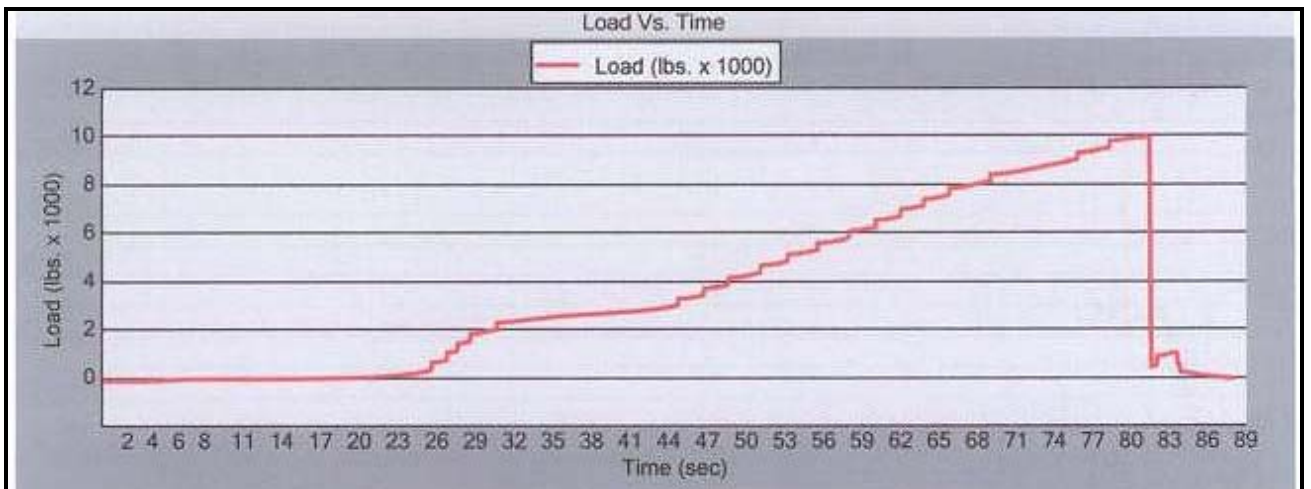
Sample: 3



Sample: 4



Sample: 5



Sample: 6