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AND
NAUTICAL/NUCLEAR ANALYSIS
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CERTIFICATION TEST **REPORT**

CERTIFICATION **TEST** REPORT 16411-1
MECHANICAL STRENGTH TESTS
ON
115-15 & 115-15-S 15-INCH CLEATS
FOR
ACCON MARINE, INC.

CUSTOMER:

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

MANUFACTURER
OF TEST ARTICLE: ACCON MARINE, INC.
CLEARWATER

DATE: Feb. 13, 2004

REPORTNO.: 16411-1
IMANNA JOB NO.: 16411
CUSTOMER P.O. NO.: Verbal
CONTRACT: N/A
PAGES IN REPORT: **4**

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 13th day of February, 2004

David H. Hudgins

David H. Hudgins
Commission # DD 010632
Expires May 3, 2005
Bonded Thru
Atlantic Bonding Co., Inc.

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 L. White
PROJ. ENGINEER

1. TEST ARTICLE

Six samples of a stainless steel 15-inch pull-up cleat manufactured by Accon Marine Clearwater, Florida were received for test. Three of the samples were designed to be attached with welded on fasteners and three of the samples were designed to be attached with through bolts (see photos).

2. MODEL NUMBER

115-15 (welded fastener) 115 – 15 – S (through bolt)

3. REQUIREMENTS

The requirements for this effort are to perform side pull tests on the received cleats to determine their breaking strength.

4. PROCEDURES

Each cleat was mounted to a 1" 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 ultimate load capability in the direction of pull.

5. RESULTS

The three assemblies designed to be attached with welded on fasteners failed at the fasteners (see photo). The three assemblies designed to be attached with through bolts failed at the connection of the cleat and assembly body (see photo). Specific loads reached for each failure can be seen in the following tables.

115 – 15Cleats

SAMPLE	MAX LOAD (lbs)	FAILURE MODE
1	65,640	CLEAT PULLED FROM ASSEMBLY
2	54,140	CLEAT PULLED FROM ASSEMBLY
3	64,660	CLEAT PULLED FROM ASSEMBLY
Average	61,480	

115 – 15 – S Cleats

SAMPLE	MAX LOAD (lbs)	FAILURE MODE
1	36,680	FASTENER SHEARED OFF
2	29,830	FASTENER SHEARED OFF
3	28,810	FASTENER SHEARED OFF
Average	31,773	

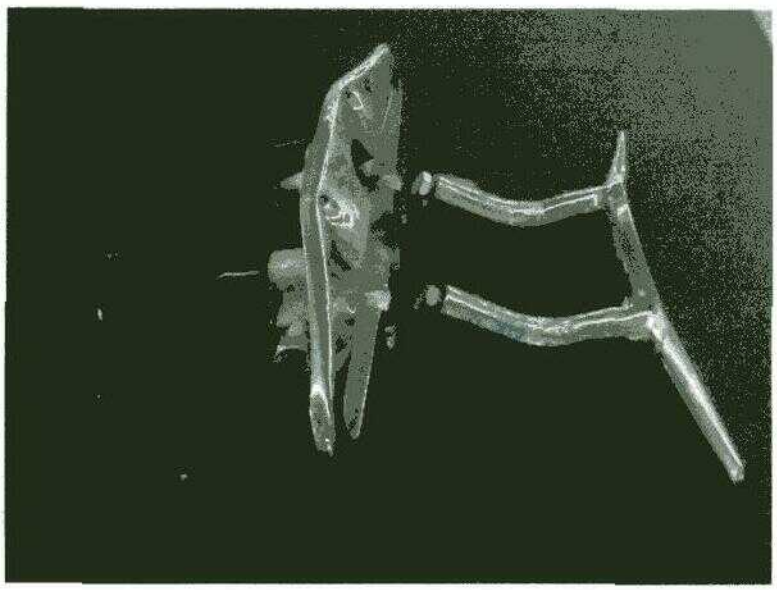

Figure 1. 115 – 15 typical failure mode.

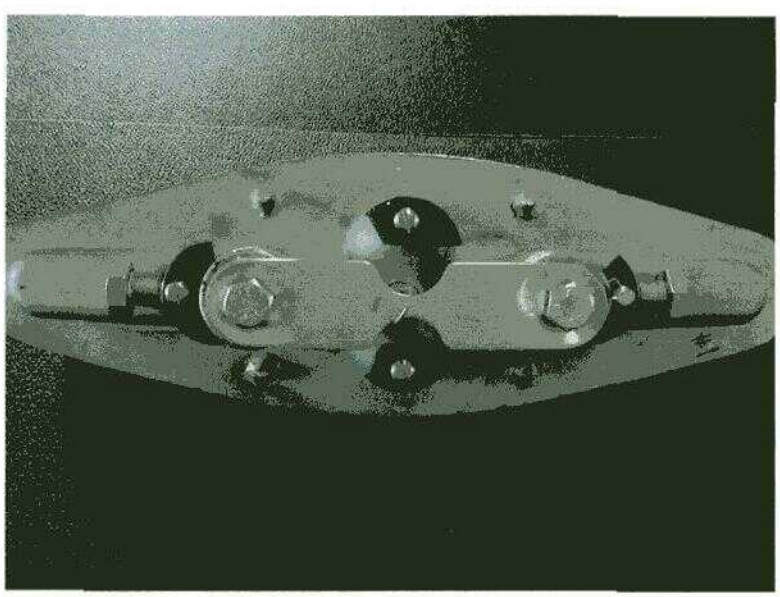

Figure 2. 115 - 15 - S typical failure mode (fastener failure).

Figure 3: view of through **bolt** holes

6. OBSERVATIONS AND COMMENTS

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.