



Test Performed At:  
 Attwood Test Lab  
 1016 N. Monroe St.  
 Lowell, MI, 49331  
 (616) 897-2268

Test Name: ABYC P-Trap Weathertight Test  
 Test Start Date: 6/30/2011  
 Test Complete Date: 7/5/2011  
 Test Requester (x): Chris Bostwick  
 Test Result: **Info Only**

Product Name/Category: Integrated Fuel Systems  
 Test Request#: 2011-326 Test ID:  
 Test Specification (rev): ABYC H-24.18.4.3 Ref.# 7/09  
 Test Method (rev): ABYC H-24.18.4.3 Ref.# 7/09  
 Test Technician (x):  
 Test Technician (x): Laura Earnest (X268)  
 Test Lab Supervisor (x): Richard Mullennix (x332)

Part# (s)\*: **1670, 1674**  
 \* See sample description for modifications or BOM changes made to part #'s listed above  
 Sample Build Date: Qty:  
 Sample Description: N/A 1 each  
 Received (1) black plastic p-trap (1670) and (1) flush mount stainless steel p-trap (1674), for development testing.

Test Description:  
 ABYC H-24.18.4.3 Weathertight test:  
 Subject the vent external fitting to a continuous water spray, for 15 minutes, using as many nozzles as required against the entire top, face and exposed sides of the fitting at an operating pressure of 5 psi. Flow of water must be at least 2 inches per hour. Samples installed on 1/4" gel coat. Applied RTV Silicone on 1670 flange, and on cup perimeter of 1674 to seal. Samples cured for 24 hours before test. Attached hose to vent and plugged end to collect water. Tested for 15 minutes at each angle starting at 0 degrees, and incrementing by 5 degrees until 40 degree maximum was achieved. If the sample leaks, the angle is reduced by 1 degree and retested until no internal wetting is observed.

Acceptance Criteria:  
 Upon completion, there will no measureable water or wetting of any connected internal fuel system components

Equipment Used (Gauges)			Equipment Used (other)		Lab Environment	
ID#	Description	Cal. Due Date	Serial#	Description	Temp °F	Hum %RH
SW7	Stopwatch	11/01/11	N/A	Weather Tight Test Chamber	72	65%
DL-4	Digital Level	03/01/12	N/A	Gel Coat		
11	Pressure Gauge	12/01/11	N/A	Aim 100 RTV Silicone		

Data/Results/Observations: (Data tables, photos, may be attached)

Sample 1670 completed test with no leaks. Sample 1674 began to leak at the 40 degree angle.

Angle Up (degree)	1670	1674	Comments
0	Pass	Pass	
5	Pass	Pass	
10	Pass	Pass	
15	Pass	Pass	
20	Pass	Pass	
25	Pass	Pass	
30	Pass	Pass	
35	Pass	Pass	
40	Pass	Not Pass	1.2 ml water in sample
39	No Test	Retest	less than .31 ml
38	No Test	Retest	less than .62 ml
37	No Test	Retest	3 drops
36	No Test	Retest	3 drops
35	No Test	Retest	2 drops
34	No Test	Pass	Breakpoint reached

Deviations:  
 None

Disposition of Samples:  
 Return

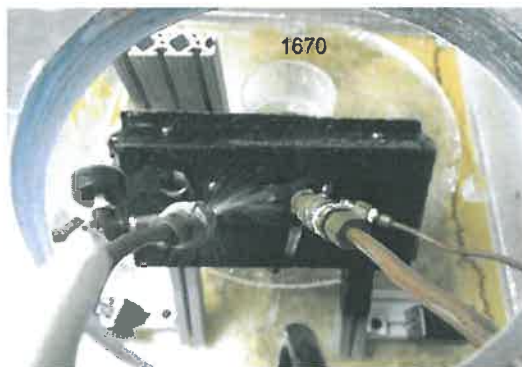
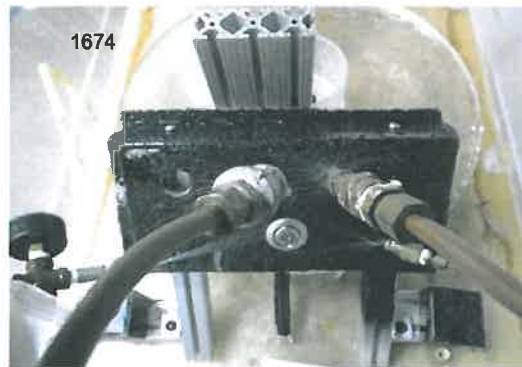
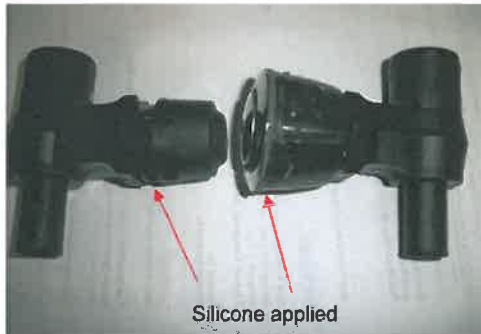


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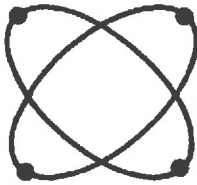
Set Up



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Results relate to only the items tested

7/7/2011



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

# CERTIFICATION TEST REPORT

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TEST REPORT  
18996-4  
ABYC H-24  
WATERTIGHT-WEATHERTIGHT TESTS  
ON  
FUEL TANK VENT P-TRAP  
P/N:1674  
FOR  
ATTWOOD MARINE

**CUSTOMER:**

ATTWOOD CORPORATION  
1016 N. MONROE ST.  
LOWELL, MI 49331

**MANUFACTURER**  
OF TEST ARTICLE: Attwood Marine

**REPORT NO.:** 18996-4  
**IMANNA JOB NO.:** 18996  
**CUSTOMER P.O. NO.:** 179643  
**CONTRACT:** N/A  
**PAGES IN REPORT:** 2

**DATE:** March 9, 2011

**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 9th day of March, 2011

*Marydel Kramer*



**MARYDEL KRAMER**  
Notary Public - State of Florida  
My Comm. Expires Jul 31, 2012  
Commission # DD 916716  
Bonded Through National Notary Assn.

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**

Alan Bell  
**PROJ. MANAGER**

1. TEST ARTICLE

One fuel tank vent P-Trap assembly (P/N:1674) was received from Attwood Marine for test. The assembly is designed to be mounted above the sheer line on a boat deck.

2. REQUIREMENT

The received sample is to be subjected to the A-24 "Weathertight and Watertight" Tests from the "Standards and Technical Information Reports for Small Craft" of the ABYC, to verify that the assembly is acceptable for installation in the areas prescribed.

3. PROCEDURE

Weathertightness Test

The sample was mounted in a test fixture and subjected to a continuous fifteen minute spray of water over the entirety of assembly top, face and side surfaces. The rate of flow during the test was 2.5" / hr at a pressure of 5 psi. The assembly was monitored for intrusion of water for the duration of and following the test period.

Watertightness Test

The sample was mounted in a test fixture and subjected to a continuous exposure to a direct stream of water from a one-inch nozzle at a pressure of 15 PSI from a distance of ten ft.(3 meters) for a period of five minutes. The assembly was monitored for intrusion of water for the duration of and following the test period.

4. RESULTS SUMMARY

No water was detected in the assembly following either the "Weathertight" or the "Watertight" test. The received P-Trap assembly meets the "Weathertight " and "Watertight" test requirements of ABYC H-24.

5. 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.