

INTERMODAL MATERIÉL
AND
NAUTICAL/NUCLEAR ANALYSIS
IMANNA
LABORATORY INC.

CERTIFICATION TEST REPORT

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CERTIFICATION TEST REPORT
18179-1
NMMA TESTS
35 GALLON FUEL TANK
S/N: 100-02
FOR
VICEM YACHTS USA

CUSTOMER:

Vicem Yachts USA
2015 SW 20th Street, Suite 200
Fort Lauderdale ,FL 33315

MANUFACTURER
OF TEST ARTICLE: Vela Yachting
No. 22/2 34947, Tulza, Turkey

DATE: July 14, 2008

REPORT NO.: 18179-1
IMANNA JOB NO.: 18179
CUSTOMER P.O. NO.: e-mail
CONTRACT: N/A
PAGES IN REPORT: 10

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 14th day of July, 2008

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
Alan Bell
PROJ. MANAGER

1. TEST ARTICLE

The test article is a Vela Yachting 35-gallon / 132.5 liter fuel tank intended for permanent installation in a boat for gasoline storage. The tank is made of 12 mm thick, welded HDPE. The tank has two slosh baffles inside. All openings and fittings are on the top panel of the tank.

2. PART NUMBER

Benzine

3. SERIAL NUMBER

100-02

4. REQUIREMENTS

The test article is to be tested to determine its compliance to the NMMA requirements for permanent fuel tanks. The requirements are stated in several standards. The ABYC requirements are stated in ABYC H-24, the ISO requirements in ISO 10088, and the USCG requirements in 33 CFR 183.581, 183.580, and 183.586 for Mechanical Strength and 183.590 for Fire Resistance.

5. PROCEDURES

The procedures employed in conducting these tests are the procedures specified in the NMMA Certification Handbook under the section entitled, "Permanent Fuel System", and ISO 10088. The procedures are the same procedures specified by the ABYC in Standard H-24 and the USCG published test procedures entitled "Fuel System Standard Test Procedure" dated January 1978. Specifically, Lab Examination No. 9, Lab Examination No. 10, and Lab Examination No. 13 were conducted. The procedures employed specify tests that constitute the requirements deemed necessary by the NMMA, ISO, ABYC, and USCG for fuel tanks 25 gallons capacity and above to be in compliance with the Fuel System Standard, Title 33 CFR, Part 183, Subpart J, Sections 183.510, 183.580, 183.586, and 183.590 and ISO 10088.

Upon receipt, the test article was inspected for damage and any obvious signs of noncompliance to the requirements for fuel tanks. The fuel tank was subjected to a Static Pressure Test, a Pressure Impulse Test, and to a 2½ -minute Fire Test in accordance with the test procedures.

6. RESULTS

The results of the tests performed indicate that the 35 gallon fuel tank meets the requirements for Mechanical Strength and Fire Resistance specified by the NMMA, ISO, ABYC, and USCG for permanently installed fuel tanks 25 gallons capacity and above. No leaks were observed in the tank following the 25,000 cycles of Pressure Impulse testing, the Static Pressure Test, or the 2½ -Minute Fire Test.

7. OBSERVATIONS AND COMMENTS

The results presented herein apply only to the test specimen as prepared and as tested. Test equipment used in the performance of this test program was calibrated to standards traceable to the NIST.



Figure 1: view of tank undergoing fire test

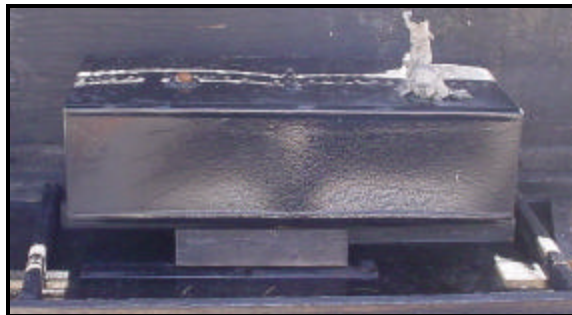


Figure 2: view of tank following fire test

APPENDIX SUPPORTING DATA

TEST PROCEDURE USCG, ISO
RECEIVING INSPECTION

1. Date: July 7, 2008.
2. Test Article I.D. No. 18179-1.
3. Test Procedure No. USCG.
4. Test Agency: IMANNA Laboratory, Inc..
5. Test agency Job Number: 18179.

Complete Items 6-11 only if component and/or system is installed in boat.

6. Nominal Length and Type of Boat ___FT. ___I/O ___O/B ___Stern Drive ___Other
7. Boat Manufacturer's Name _____.
8. Boat Trade Name and/or Model No. _____.
9. Engine Manufacturer's Name _____.
10. Engine Horsepower _____ Engine Model No. _____.
11. Out-drive Model No. _____.
12. Inventory of Other Accessories:

TEST PROCEDURE USCG, ISO
RECEIVING INSPECTION

13. Name of Component and/or System:

- No. 1 35 gallon HDPE gasoline fuel tank .
- No. 2 _____ .
- No. 3 _____ .
- No. 4 _____ .
- No. 5 _____ .

14. Explanation of Additional Data: NONE .

_____ .
_____ .
_____ .

15. Receiving Inspection Results: _____ .

Appears complete and ready for test .
_____ .
_____ .

16. Nonconformance Items Noted But Not Tested by this Procedure:

NONE .
_____ .
_____ .

Component or System: 35 Gallon Fuel Tank .

13(a). Manufacturer: Vela Yachting .

13(b). Date of Manufacture: Unknown .

13(c). Model No.: Benzine .

13(d). Serial No.: 100-02 .

13(e). Capacity or Rating: 35 Gallons (US) .

13(f). Shipping or Transport Damage: NONE .

_____ .

_____ .

13(g). Quality of Workmanship: GOOD .

_____ .

13(h). Conformity to Manufacturer's Documentation: UNKNOWN .

_____ .

13(i). Dents or Abrasions: NONE .

_____ .

13(j). Loose or Missing Screws, Clamps, Nuts, etc.: NONE .

_____ .

_____ .

13(k). Other Defects: NONE NOTED .

_____ .

_____ .

_____ .

TEST PROCEDURE NMMA, ISO 10088

Pressure Impulse Test

TEST DATA

1. Test Article Number: 18179-1.
2. Capacity of Fuel Tank: 35 gallons (US).
Requirement: More than 25.0 gallons.
3. Is Tank Filled to its maximum Capacity with fresh water? YES.
Requirement: Fill with water, and use air over water to pressurize the tank to prevent pressure shocks.
4. Cycle Counter Reading at Start of Test: 000,000.
5. Cycle Counter Reading at End of Test: 025,000.
6. Number of Cycles Completed: 025,000.
Requirement: 25,000 cycles of pressure from 0 to 3 to 0 PSIG.
7. Pressure During Test: 0.25 PSIG Minimum; 3.00 PSIG Maximum.
Requirement: 3 PSIG Max.; Less than 0.5 PSIG Min.
8. Cycle Rate: 12.
Requirement: Less than 15 cycles per minute.
9. Was leakage Observed During the Test? No.
Requirement: Tank shall Not Leak.
10. Post Test Leak Test Pressure: 3 PSIG.
Requirement: Tank design Maximum Pressure.
11. Is Leakage Detected in the Tank Following the Test? No.
Requirement: Zero Leakage.
12. Remarks: _____

TEST PROCEDURE NMMA, ISO .

TEST DATA

FIRE TEST

1. Test Article No.: 18179-1 .
2. Capacity of Fuel Tank: 35 Gallons (US) .
3. Pre-Test Pressure: 3 PSIG .
Requirement: Design Maximum Tank Pressure.
4. Amount of Gasoline in Tank as Beginning of Fire Test: 8.75 gallons .
Requirement: 25% of Capacity
5. Height of Component above Heptane Surface: 3 inches .
Requirement: 3 inches
6. Duration of Fire: 2 ½ Minutes .
Requirement: 2 ½ minutes
7. Highest Recorded Temperature: Not Recorded .
Requirement: There is no minimum temperature requirement for the NMMA General Installation.
8. Post Fire Leak Test Pressure: ¼ PSIG .
Requirement: ¼ PSIG
9. Is there leakage Detected in the Tank After the Fire? NO .
10. Remarks: Tank passes NMMA General Installation Configuration Fire Test. .

TEST PROCEDURE NMMA, ISO 10088 .

TEST DATA

Static pressure test

1. Test Article Identification Number: 18179-1 .
2. Maximum Design Pressure: 3.0 PSIG .
3. Static Test Pressure Applied to Tank: 4.5 PSIG .
Requirement: The Greater of 3 PSIG or 1.5 Times the Maximum Design Pressure.
4. Duration of Test Pressure Application: 5 Minutes .
Requirement: 5 Minutes Minimum.
5. Method of Leak Detection Used: Soapy Bubble Solution .
Requirement: Some Method Other Than Pressure Decay.
6. Amount of Surface Area Checked: Entire Tank Surface .
Requirement: Entire Tank Surface.
7. Was Any Leakage Detected? NO .
Requirement: No Leakage Allowed.
8. Remarks: Tank passes Static Pressure Test with no leakage being observed.