NAVSEA
STANDARD ITEM

FY-13

ITEM NO: 009-25
DATE: ***29 JUL 2011***
CATEGORY: II

1. SCOPE:

1.1 Title: Structural Boundary Test; accomplish

2. REFERENCES:

2.1 MIL-STD-777, Schedule of Piping, Valves, Fittings, and Associated Piping Components

2.2 802-5959353, MIL-STD-777D Modified for DDG-51 Class, Schedule of Piping, Valves, Fittings, and Associated Piping Components

3. REQUIREMENTS:

3.1 Accomplish a preliminary air test of spaces in accordance with the following:

3.1.1 Install 2 independent pressure gages.

3.1.1.1 Gage range shall be such that the test pressure is in the middle third of the scale.

3.1.2 Install 2 relief valves set at 15 percent above test pressure.

3.1.3 Install one vent valve.

3.1.4 The air source shall not exceed 25 PSIG and shall have a supply capability less than the exhaust capability of either relief valve.

3.1.5 Apply a soap solution to the opposite side of the structure and inspect for leakage.

(V) "VISUAL INSPECTION"

3.1.6 Accomplish a visual inspection of disturbed mechanical joints for leakage upon completion of filling each tank. Allowable leakage: None.

(I) "UNOBSTRUCTED FLOW"

3.1.7 Accomplish unobstructed airflow test of air escape and overflow piping.

3.1.8 Submit one legible copy, in ***approved transferrable*** media, of a report listing results of the preliminary air test, to the SUPERVISOR.

(I)(G) "AIR TEST"

3.2 Accomplish an air test of spaces in accordance with the following:

3.2.1 Install 2 independent pressure gages.

3.2.1.1 Gage range shall be such that the test pressure is in the middle third of the scale.

3.2.2 Install 2 relief valves set at 15 percent above test pressure.

3.2.3 Install one vent valve.

3.2.4 The air source shall not exceed 25 PSIG and shall have a supply capability less than the exhaust capability of either relief valve.

3.2.5 Apply a soap solution to the opposite side of the structure, associated tank piping, overflow and air escape piping, and inspect for leaks.

(V) "VISUAL INSPECTION"

3.2.6 Accomplish a visual inspection of disturbed mechanical joints for leakage upon completion of filling each tank. Allowable leakage: None.

(I) "UNOBSTRUCTED FLOW"

3.2.7 Accomplish unobstructed airflow test of air escape and overflow piping.

(I)(G) "AIR HOSE TEST"

3.3 Accomplish a local air hose test in accordance with the following:

3.3.1 Air hose nozzle shall be as close as possible (within 3 inches) and pressure directed at the structure under test in a manner most likely to disclose leaks.

3.3.1.1 The minimum nozzle diameter shall be 3/8 inch and the nozzle pressure shall be 60 to 90 PSIG as monitored at the nozzle.

3.3.2 Apply a soap solution to the opposite side of the structure and inspect for leakage.

(I)(G) "WATER HOSE TEST"

3.4 Accomplish a water hose test in accordance with the following:

3.4.1 Use a one and one-half inch hose with a minimum nozzle diameter of one-half inch at 50 PSIG nozzle pressure at a maximum distance of 10 feet from the surface being tested.

3.4.2 The stream of water shall be directed against the structure in a manner most likely to disclose leaks. The opposite side of the structure shall be inspected to detect and locate leaks.

(I)(G) "VACUUM BOX TEST"

3.5 Accomplish a local vacuum box test in accordance with the following:

3.5.1 Apply a soap solution to the structure being tested.

3.5.2 Install a vacuum box with a clear cover over the entire joint or fitting being tested.

3.5.2.1 Install the vacuum box so that the pressure differential is in the direction of an air test.

3.5.3 Draw a vacuum of at least 10.2 inches of mercury and inspect for leaks.

(I)(G) "CHALK TEST"

3.6 Accomplish a chalk test of each structural closure. Chalk imprint shall be centered with 100 percent contact of knife edge to gasket.

3.***7*** Repaired areas requiring a structural boundary test shall remain uninsulated and unpainted until completion of successful inspection and test.

4. NOTES:

4.1 Associated piping is defined as, "An assembly of pipe, tubing, valves, fittings, and related components forming a whole or a part of a system which starts or terminates in subject area, thus being common to and associated with same."