


**MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION**

MEMORANDUM

TO: Distribution

FROM: Benjamin Chin, Manager
Division of Facilities Design 

DATE: July 18, 2008

SUBJECT: Design Standard (DST) 2008-04, Hydrostatic Water Pipe Testing

Effective immediately, all projects at Baltimore/Washington International Thurgood Marshall (BWI Marshall) and Martin State (MTN) Airports shall be designed and specified per the following test requirements:

A. General:

1. Use ambient temperature water as a testing medium unless there is risk of damage due to freezing.
2. Provide temporary restraints for expansion joints that cannot sustain reactions due to test pressure.
3. Isolate equipment from piping.
4. Install safety valve, set at a pressure of no more than one-third higher than test pressure, to protect system during test.
5. Provide signs where piping is under hydrostatic pressure.
6. Test pressure during examination shall be monitored and adjusted for the corresponding ambient temperature.
7. Prepare test and inspection report.

B. Hydronic Piping:

1. Isolate expansion tanks and determine that hydronic system is full of water.

2. Subject piping system to hydrostatic test pressure that is not less than 1.5 times the system's working pressure. Test pressure shall not exceed maximum pressure for any vessel, pump, valve, or other component in system under test. Verify that stress due to pressure at bottom of vertical runs does not exceed 90 percent of specified minimum yield strength or 1.7 times "SE" value in Appendix A in ASME B31.9, "Building Services Piping."
3. After hydrostatic test pressure has been applied for at least 30 minutes, examine piping, joints and connections for leakage. Eliminate leaks by tightening, repairing, or replacing components, and repeat hydrostatic test until there are no leaks.

C. Domestic Water Piping:

1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired.
2. Isolate test area. Subject piping to static water pressure of 50 psig (345 kPa) ??? above operating pressure without exceeding pressure rating of piping system materials, and allow to stand for 4 hours. Leaks and loss in test pressure constitute defects that must be repaired.

If the above specifications conflict with any other codes or regulations, or if you should have any questions, please contact the Manager, Division of Facilities Design at 410-859-7093.

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