


**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) 2008-03, Floor Drain Penetration Test
Baltimore/Washington International Thurgood Marshall (BWI Marshall) and
Martin State (MTN) Airports

Effective immediately, all projects at BWI Marshall and MTN Airports shall be designed and specified per the following:

11.6.8.6 Test for Waterproofing of Floors

1. Test of all wet areas as defined and required to be waterproofed in conformance to Chapter 11.6.8, "Waterproofing" shall be performed to ensure that the recommendations in the standards have been successfully applied and that all spaces below and adjacent to the wet areas are protected from water penetration and moisture damage.
2. Items to be Tested:
 - a. Waterproofing of Floors:
 - i. Continuity of membrane and/or liquid-applied material.
 - ii. Perimeter walls to a minimum 1-1/2 inch height above the contributory area.
 - iii. Projections of pipe and other material above the floor.
 - b. Floor Drains, Floor Sinks and Floor Cleanouts:
 - i. Prevention of migration of water to occupied spaces below any wet area to be waterproofed in conformance with Chapter 11.6.8, "Waterproofing".
3. Cost of the flood test shall be borne by the tenant (Building Permit) or contractor (MAA contracts), not the Airport.

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4. The flood test shall include testing of:
 - a. Each wet area to be waterproofed in conformance with Chapter 11.6.8, “Waterproofing” standards.
 - b. All floor drains, floor sink drains, and clean outs in and serving each wet area.
 - c. Ensure that all corners and door threshold are thoroughly tested.

5. Test Procedure: The flood test shall be performed in conformance with the following:
 - a. Ensure that all new sanitary pipe drains are pre-tested for leaks and proper drainage prior to the wet area flood test.
 - b. Allow for manufacturer’s recommended dry and cure time for the installed water proof membrane before conducting testing.
 - c. Notify the MAA Office of Commercial Management ten calendar days prior to testing to obtain access and an access schedule for the spaces being tested and the spaces located below and adjacent to the areas to be tested.
 - d. Prior to testing, remove acoustic ceiling panels in spaces located beneath test area.
 - e. Prior to testing, provide access into the ceiling/under slab space in any areas with drywall ceiling that are located beneath the test area.
 - f. Prior to testing, provide protective plastic sheet covering to all equipment and furniture in any occupied areas located immediately below or adjacent to the wet floor being tested.
 - g. Prior to testing, provide protection of doors into and out of the space being tested.
 - h. Provide a seal at the sill (threshold) of each door into and out of the space being tested.
 - i. Provide observers in the areas located immediately below the wet area being tested.
 - j. Equip the testing team with devices that will permit communication between the wet floor area being tested and the areas immediately below and adjacent to the wet area being tested.
 - k. Provide each of the observers with a reporting form that, when filled out, will locate any leaks for use during subsequent resealing operations.
 - l. Install plugs in the floor drains in the wet floor being tested.
 - m. Flood each area to a depth of 1-1/2 inches above the highest finish level of the contributory area. (That is, to ½ inch below the 2-inch height of the turned up membrane located at the edges of the contributory area).
 - n. Maintain 1-1/2 inches of water in the wet area for a minimum of 2 hours.

- o. Observe and report any leaks using the forms and communication devices called for above.
 - p. Identify source of leak on top side of slab.
 - q. After 2 hours of testing, unplug floor drains and allow water to drain out of the wet area.
 - r. After one hour, observe again the conditions in areas below and adjacent to the test area.
6. Report: Compile a report summarizing the test and specifically locating and describing any leaks that occur. Include the observers' filled out forms as well as a diagram showing where the sources of the leaks are located. Provide 2 copies of the report to MAA Inspector (Building Permit) and/or the Resident Engineer (MAA contracts).
7. Re-test: After sealing leaks, re-test the wet area as specified above. Continue sealing leaks and testing until all leaking has been eliminated.
8. Upon completion of the test, replace all removed acoustic ceiling panels and repair any drywall ceiling modified to provide testing access. Remove all protective plastic sheathing and return the space to its original condition.
9. Repair: The tenant and contractor will be responsible for all damage caused by the test in areas which are located adjacent to and below the test area.

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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bcc: MAA Intranet