

Project

PROFILE

Wind Uplift Testing



UPLIFT RESISTANCE TESTING OF ROOF SYSTEMS

When insurance coverage for a building Owner is associated with FM Global (the communicative name for Factory Mutual Insurance Company), the roof assembly installed on the subject roof has to comply with the requirements and/or guidelines published in the FM Approval Guide. In particular situations, specific testing of the roof assembly may be warranted to determine if adequate wind resistance is present. On new roofs, these tests are typically performed during construction. On existing roofs, the tests may be required if the roof assembly is considered to be classified as "Inferior Construction" or when materials are utilized that are not approved by FM Approvals, such as an existing lightweight insulating concrete fill substrate. The testing that is typically required involves performing wind uplift resistance testing of the roof assembly. This testing can be performed by either "The Pull Test" or "The Negative Pressure Test" as outlined in FM Global Property Loss Prevention Data Sheet 1-52 "Field Uplift Tests".

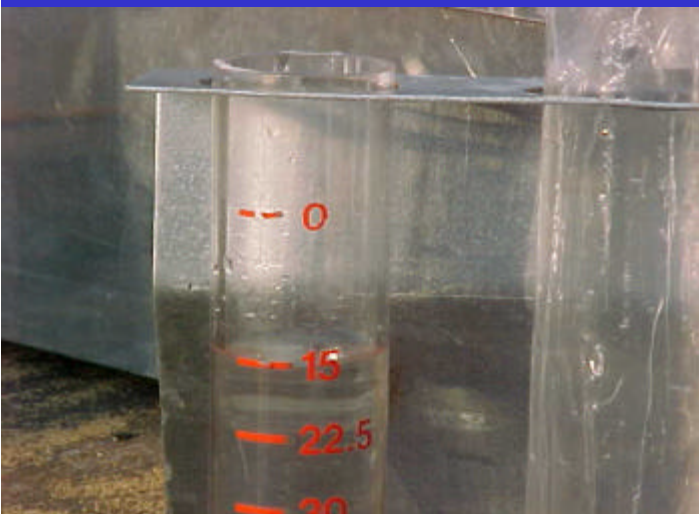
PCI performs the Negative Pressure Test utilizing a dome-shaped rigid acrylic plastic vacuum chamber fitted to a vacuum pump and a water manometer for measuring the achieved pressure within the chamber. Utilizing the sources of the respective contractor to prepare the surface of the roof to receive the testing apparatus and to assistance with the testing process. PCI personnel perform the test at random representative locations at the prescribed intervals. This test is typically performed at one test per 10,000 square feet of roof. Two tests are typically performed on "older" roofs smaller than 10,000 square feet. If failures are encountered, additional tests are required. The test involves applying an initial pressure of 15 psf, increasing in increments of 7.5 psf, holding the load for one minute at each increment, until the desired loading requirement is achieved. Upon completion of the test, PCI submits a data report indicating the actual results of the tests



Uplift Test Apparatus



Water Manometer & Vacuum Pump



Manometer Indicating 15 pounds of pressure

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