

PosiTest[®] AIR

Leak Tester

Instruction
Manual v. 1.0



DeFelsko

Introduction



The portable, hand-operated **PosiTest AIR Leak Tester** tests the air barrier integrity of single, two-ply and liquid membrane systems, including air barriers, roofing systems, waterproofing and ground liners by locating leaks.

In accordance with ASTM E 1186, the **PosiTest AIR** will indicate whether leaks exist in the test area. It is a simple pass/fail test.

The **PosiTest AIR** can be utilized during construction and post-construction. The practice consists of applying a leak detection liquid (PosiTest AIR Test Solution) to the test specimen surface, sealing a transparent chamber around the specimen and depressurizing the chamber with a fan.

The location of an air leak is indicated by bubbling of the Test Solution. An estimate of the relative size of the leak can be made based on the size and speed with which the bubbles form.

Quick Start

The **PosiTest AIR** powers up and displays dashes when the  button is pressed. To preserve battery life, the instrument powers down after 5 minutes of no activity or by holding  for 2 seconds.

Basic steps for performing a test with a **PosiTest AIR**:

Prepare for the Test (pg. 3)

- Clean the test area.
- Set Mode of Operation - *Automatic (default) or Manual*

Perform Test (pg. 4)

- Apply Test Solution to test area.
IMPORTANT: Test Solution must be applied correctly. (pg. 4)
- Place test chamber firmly over test area.
- Initiate test and observe test area for bubbles; determine pass or fail.
- Store test result in memory. (optional)

PosiTest *AIR* Leak Tester Kit Contents

- PosiTest *AIR* tester body
- High impact, transparent, polycarbonate test chamber
- 5' (1.5 m) hose with quick disconnect couplings
- AC Power Supply
- (4) - 8 ounce (237ml) bottles of Test Solution each with dauber applicator
- Nylon carrying case with shoulder strap
- USB cable & PosiSoft 3.0 Desktop Software (available as download)
- Instruction Manual
- Certificate of Calibration traceable to N.I.S.T.



PosiTest *AIR* Test Solution

Every PosiTest *AIR* comes complete with (4) bottles of Test Solution. The Test Solution is applied to the test area prior to initialization of the test.

The Test Solution has been specially formulated not to have any adverse effects on waterproofing, roofing, air barrier membranes or the PosiTest *AIR* unit. Do not use on spun polyolefin building wrap.

Additional Test Solution can be purchased by contacting your distributor.

NOTE: All residual test solution should be removed from the test area once testing has been completed. Wipe the test area with a clean, dry cloth to remove the test solution.


Preparing for the Test

Clean the Test Areas

Ensure that the test area is free of dirt, dust and debris. The test area should not be hot (from torching), frosted or extremely wet. Slight dampness around the test area will not compromise the results of the test. The area being tested should be free of ice, which may act to “plug” the leak.

Set Mode of Operation

The PosiTest AIR has two modes of operation:
Automatic (default) and *Manual*

To view current operation mode, press  .
Press again to switch between operation modes.


Automatic Mode Testing: (default and most commonly used mode)


The PosiTest AIR automatically depressurizes the test chamber at a selected rate until the selected pressure limit has been achieved.

Common test parameters:



Pressure Differential Limit: 500 Pa

Rate of Depressurization: 25 Pa/sec

Press  to display the current *Pressure Differential Limit*.
Press repeatedly to select Limit in increments of 100 Pa
(maximum of 900 Pa).

Press  to display the current *Rate of Depressurization*.
Press repeatedly to select Rate in increments of 5 Pa/sec
(maximum of 30 Pa/sec).

Manual Mode Testing:

The PosiTest AIR test chamber is manually depressurized using the  and  buttons. Manual mode is ideal for quick spot checks of multiple test areas.

Performing the Test

1. Apply Test Solution

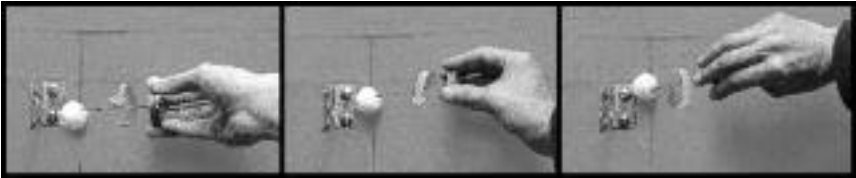
Using the included dauber applicator, thoroughly cover the prepared test area with a thin film of Test Solution.



IMPORTANT:

For best results, test solution must be applied correctly.


- Rotate dauber as test solution is being applied over test area.
- Do not overapply or the solution will form a froth or foam.






2. Place the Test Chamber over the Test Area

Place and hold the test chamber firmly against test area to ensure continuous contact with the substrate. Achieving a perfect seal between the test chamber and test surface is not necessary. The PosiTest AIR will adjust for any extraneous leakage that occurs.

3. Initiate the Test

Press  to ready the PosiTest AIR for the test. Press it again to begin test.


In *Automatic Test Mode* (pg. 3) the PosiTest AIR will automatically increase fan speed until the set Pressure Differential Limit is reached or the  button is pressed.

In *Manual Test Mode* (pg. 3) the user manually adjusts fan speed to depressurize test chamber as test is being performed. Press and hold  to increase or  to decrease fan speed.

During the test, if the solution around the test area bubbles, a leak is present.

Careful observation is important as bubbles of different sizes can form anywhere within the test area where solution is present. Bubbles may also form and pop quickly. A very large leak may not form a bubble, but rather blow solution away.




When a leak has been identified, the test can be halted by pressing the  button. In Automatic mode, the PosiTest AIR will automatically stop when the pre-selected pressure limit is reached.


Let the pressure within the test chamber decrease before removing it from the test surface. The test area can then be marked for further repair, or the bubble can be photographed if documentation is required for the particular job.

Upon completion of the test, the maximum pressure differential and duration of the test will flash on the display.

4. Store Test Result *(optional)*

Press  upon completion of the test. The PosiTest AIR will display "PASS".




Press  to store a PASS result.

Press  to store a FAIL result.

In addition to the PASS/FAIL result, the rate of depressurization, maximum pressure differential and test duration is stored in memory.

Press  repeatedly, to review test results stored in memory.

To remove all stored data:


Press and hold the  button, then press the  button. The  icon on the display will disappear.


Accessing Stored Test Results

Stored test results can be downloaded using the supplied USB cable and **PosiSoft 3.0 Desktop Software** (available for download at www.defelsko.com/posisoft). Test results are not erased from memory after downloading.

Power Supply / Low Battery Indicator

Power Source: Built-in rechargeable NiMH battery (> 200 tests with full charge)

The  symbol will appear when remaining battery power is below 35%.

The built-in rechargeable NiMH batteries** are charged using the included AC power supply. Ensure batteries are charged prior to use. The  symbol will blink while the instrument is charging and disappears when fully charged. The charging process will take 2-3 hours depending on remaining battery power.

NOTES:

The included AC power supply can be used to power the instrument while charging is in progress.

The USB port will NOT charge or power the PosiTest A/R. The USB connection will drain battery power when connected for an extended period of time.

****Do not attempt to remove or replace the internal NiMH battery pack. In the unlikely event power issues are experienced, please contact your dealer or DeFelsko for technical support assistance.**

Technical Data

Conforms to: ASTM E 1186 and others.

Specifications: Resolution: 1 Pa Accuracy: $\pm(10\% + 10 \text{ Pa})$

PosiTest AIR Storage Temperature: -22° to 149° F (-30° to 65° C)

Operating Temperature: 5° to 122° F (-15° to 50° C)

PosiTest AIR Storage Temperature: -22° to 149° F (-30° to 65° C)

Test Solution Operating Temperature: -22° to 149° F (-30° to 65° C)

Calibration

The **PosiTest AIR Leak Detector** is shipped with a Certificate of Calibration showing traceability to a national standard. For organizations with re-certification requirements, the **PosiTest AIR Leak Detector** may be returned at regular intervals for calibration. DeFelsko recommends that our customers establish the instrument calibration intervals based upon their own experience and work environment. Based on our product knowledge, data and customer feedback, a one year calibration interval from either the date of calibration, date of purchase or date of receipt is a typical starting point.