

APPENDIX E

USDA Pressure-Leakage Test for NAP Fumigation Chambers

Before a chamber is used for fumigation, it must be checked for tightness using an open-arm manometer. See "Open-Arm Manometer" on page -8-1-30 for a detailed description of this type of manometer (If a digital manometer is used, contact CPHST for accurate conversion factors.)

The procedure for conducting a pressure leakage test is as follows:

1. Create an opening (usually 1-inch diameter) in the chamber for the use of a blower or other means for the introduction of air to create a positive pressure in the chamber.
2. Create an additional opening, such as a gas sampling line opening, for the manometer.
3. Close chamber as for fumigation.
4. Attach one end of the manometer to the chamber opening.
5. Use vacuum cleaner blower or similar apparatus to create pressure (as measured on an open arm manometer) of either 25 or 50 mm depending on chamber construction.

For a chamber constructed of materials such as cement or cinder blocks, create a total pressure of 50 mm. The time lapse for the chamber pressure to recede from 25 mm to 2.5 mm in each arm must be:

22 to 29 seconds; reinspect chambers every 6 months
30 seconds or longer; reinspect chambers annually

A reduced pressure test is acceptable for plywood chambers. Create a total pressure of 25 mm (12.5 in each arm of the manometer.) The time lapse for the chamber pressure to recede from 12.5 mm to 1.25 mm in each arm must be:

60 seconds or longer; reinspect chambers annually

6. Discontinue blower and close its opening
7. Observe time for pressure to recede

The inability to develop or maintain adequate pressure indicates considerable leakage. In such cases, the chamber operator can use a smoke bomb or other device in an effort to determine the areas of leakage. During each certification, conduct a preventative maintenance inspection. The maintenance inspection will ensure the merit of each unit and correct any deficiencies prior to certification. Refer to Table 6-3-1 for an inspection checklist.

Once the chamber has passed the pressure leakage test and the preventative maintenance check, the approving APHIS official must complete PPQ Form 480, Treatment Facility Construction, Operation and Test Data, and PPQ Form 482, Certificate of Approval. A copy of each of the forms should be given to the owner/operator of the chamber and also mailed to:

USDA-APHIS-PPQ-CPHST
1730 Varsity Drive, Suite 400
Raleigh, NC 27606

TABLE 6-3-1 Chamber Checklist

Chamber and Volatizer	Yes	No
Has chamber been measured and total volume calculated?		
Has chamber been checked for integrity?		
◆ Smoke test		
◆ Pressure test		
Have fans been tested to recirculate at least one third of the total volume per minute?		
Is gas monitoring required (by the workplan)?		
◆ If yes, are sampling leads properly placed (in commodity, if required)?		
◆ Are sampling leads one quarter inch inner diameter Tygon® and free from blockage?		
Will a scale be used to apply fumigant?		
◆ If yes, has the scale been calibrated and certified this year?		
◆ Is the graduated dispenser in good condition?		
Are the door seals and gaskets in good condition?		
Is the copper tubing in the volatizer intact? (check for holes)		
Are the vacuum and temperature gages accurate?		
Required Equipment:		
Tape measure or electronic measuring device		
Calculator		
Stop watch		
Air (leaf) blower with appropriate fittings and adapters		
Manometer (including tubing and appropriate liquid)		
Digital anemometer		
Gas detection device (calibrated within one year)		
Dessicant (Drierite®) and Ascarite®		
Auxillary pump (for large chambers)		
Digital thermometer (accuracy 0.1 F) with probe		
Required Safety Equipment:		
Gas leak detection device		
Self contained breathing apparatus		
First aid kit, including eye wash		
Emergency medical treatment facility map and phone number		
Required Documentation:		
PPQ Form 480, Treatment Facility		
PPQ Form 482, Certificate of Approval		
Material safety data sheet		
Warning placard (English and Spanish)		
Special local need label and permit (if applicable)		