State of Ohio Weatherization Program Standards	Section	DIAGNOSTIC TESTING METHODS
	Subject	Blower Door Test

BLOWER DOOR TEST PREPARATION 1506-1.1

Prepare the house for a blower door test by performing the following steps:

house preparation
1506-1.1a

Deactivate all vented combustion-type appliances prior to depressurizing the structure by turning the thermostat down or the appliance off.

depressurization (normal)
1506-1.1b

Prepare to perform a one-point pressurization test on structures with an operating drip pot, fuel oil-fired, wood or coal combustion unit (see 1506-1.3 for specific procedures).

pressurization (special case)
1506-1.1c

Prevent the ashes of wood/coal burning units from entering the living space by closing/sealing doors and dampers or by cleaning out or covering the ashes.

ashes, wood and coal
1506-1.1d

Inspect the house for loose or missing hatchways, panelling, ceiling tiles, or glazing panes. Secure any items that may become dislocated during the test and seal any missing hatchways.

loose items
1506-1.1e

Close all prime windows, self-storing storm windows (if possible), exterior doors and latch them as they normally would be found during the winter.

windows
1506-1.1f

Open all livable areas to the interior of the structure, even if the occupants close them off during the winter.

livable areas open
1506-1.1g

Close basement doors during test unless one of the following conditions is present:

basement doors
1506-1.1h

1. The basement is used as a living area.
2. The client leaves the basement door open during the winter or there is no basement door.
3. The air returns do not connect directly to the furnace.

basement doors (con't)
1506-1.1h

4. The basement is to be considered to be inside the Building Envelope.

favorable location
1506-1.1i

Set up the blower door unit in a favorable location in an area free from obstructions and wind interference.

BLOWER DOOR TEST, DEPRESSURIZATION (NORMAL) 1506-1.2

depressurization/ pressurization
1506-1.2a

Perform a 1 point blower door test at 50 pa or the highest achievable house pressure if unable to reach 50 pa. Use the depressurization mode, unless a solid fuel unit or drip-pot, oil burning space heater is in operation. (See 1506-1.1c).

setup location
1506-1.2b

Set the blower door up in a door with the least number of obstacles within 3 feet of the blower door fan. If the doorway leads to an enclosed area, make sure the space is open to the outside. Do not set up in a door facing the wind if an acceptable alternative exists.

frame and panel setup
1506-1.2c

Install the frame and panel securely into the door frame, making sure that there are no gaps between any of the components or between the components and the door frame.

fan setup
1506-1.2d

Set the fan into the panel/frame assembly, making sure that the panel opening fits snugly around the fan. Install the fan so that the flow ring assembly (or low flow plate) is facing toward the inside of the house. Set up the fan in a level or nearly level position.

gauge position
1506-1.2e

Set up the gauges in a vertical position if using the magnahelic gauges.

variable speed controller
1506-1.2f

Make sure the variable speed control is off. Plug the fan electric cord into an electrical outlet.

zero the gauges
1506-1.2g

Insert the tube from the house pressure gauge into the hole in the door panel. Make sure that the end of the hose is not in front of the fan outlet or positioned so that it is exposed to windy conditions. Leave the fan pressure gauge tube end inside the house (not connected to the fan). Zero the pressure gauges. **Ensure that the fabric cover or all the rings are on the fan.**

Install the open end of the fan pressure gauge tube onto the blower door fan pressure tap.

gauge to tap connection
1506-1.2h

Perform a 1 point test by depressurizing to 50 pa house pressure or the highest house pressure if unable to reach 50 pa. Use the flow rings or low flow plate if the fan pressure is less than 25 pa. If wind seems to be affecting test results, take several 1 point tests and average the results.

flow rings
1506-1.2i

Calculate the CFM50 of the dwelling by using the blower door computer or consulting the appropriate table.

calculate CFM50
1506-1.2j

Consult the blower door owner's manual or training manual for details.

further instructions
1506-1.2k

BLOWER DOOR TEST, PRESSURIZATION 1506-1.3

Use the pressurization blower door test method only if a solid fuel heating unit or a drip-pot, oil burning space heater is in operation,

pressurization determination
1506-1.3a

Install the door panel and hang the gauge assembly as it normally would be installed.

door panel/gauges
1506-1.3b

Attach a tube to the LOWER tap of the HOUSE pressure gauge and run the other end of the tube through the hole in the upper part of the door panel making sure it is away from the fan outlet.

tubes/pressure taps
1506-1.3c

Leave the FAN pressure tube "Tee" attached to the gauges and fan as it normally would be.

fan pressure tube
1506-1.3d

Attach an extra "Tee" to the UPPER taps of the FAN pressure gauge and run the other end of the tube to the outside of the house, somewhere away from any fan turbulence.

fan pressure--extra "Tee"
1506-1.3e

Install the fan BACKWARDS. In other words, the face where the flow rings/low flow plate attaches is facing the outside. The fan tube and the extra tube will run outside between the fan housing and the elastic collar. The fan speed control must remain on the inside of the door panel.

install fan
1506-1.3f

Level and stabilize the fan as necessary.

stabilize fan
1506-1.3g

fan switch
1506-1.3h

Do not change the fan switch from its normal (forward) position.

b. d. test, calculate CFM50
1506-1.3i

Take a one-point test at 50 pa house pressure. If a 50 pa house pressure difference is not achievable, take a one-point test at the highest achievable house pressure. Use the computer to complete the CFM50 calculation, and other important numbers.