

 <p>State of Ohio Weatherization Program Standards</p>	Section	MECHANICAL SYSTEMS INSPECTION
	Subject	Heat Distribution System

FORCED-AIR DISTRIBUTION SYSTEM 201-5.1

Note the locations of the registers in each room. Note any blocked or covered registers, and have them unblocked. Explain to the customer why this is important. Note the location of any registers outside the heated area or in other inappropriate locations. Consult with the customer about appropriate corrective measures.

**register locations
and blockage**

201-5.1a

CEE

Note the presence and condition of any suspected asbestos on the ductwork. Follow safe work practices when in the presence of asbestos. Do not disturb friable asbestos (see 114-1.4a).

asbestos

201-5.1b

!

Test for duct leakage (see 1506-5).

duct leakage test

201-5.1c

Inspect for duct leakage locations (see 1506-5). Note sections of ductwork that are missing or disconnected, severely corroded, rusted through, or punctured.

duct leak inspection

201-5.1d

Note any sections of ductwork that are crushed or resisting air flow. Note any areas of return duct restriction.

obstructions, flex duct

201-5.1e

Inspect the return duct system and record any sections of ductwork that are missing, loose, unsealed, rusted through, or punctured. Identify gaps, holes or other problems in panned floor joist returns.

return ducts

201-5.1f

Inspect the supply duct system and record any sections of ductwork that are missing, loose, unsealed, rusted through, or punctured.

supply ducts

201-5.1g

Note the presence of ducts passing through non-conditioned spaces (see Table 201-5). Note the existence of any duct insulation. Determine if any insulation is needed and record measurements and the amount needed.

duct insulation

201-5.1h

Note the size of the furnace filter and whether it is dirty. Show the customer how to change the filter.

furnace filter

201-5.1i

CEE

Table 201-5

Classification of Duct/Distribution System Zone

What defines whether the area that a distribution system runs through is intentionally heated, conditioned, or non-conditioned? What retrofits should be done?

Zone is:	Intentionally Heated If the zone has heat being intentionally supplied to it	Conditioned if the temperature of the zone is closer to inside temperature than to outside temperature (in winter)	Non-conditioned if the temperature of the zone is near the outside temperature (in winter)
<u>1. DESCRIPTION:</u>			
Area has:	Supply registers, radiators, and/or heat source	Distribution system, furnace/boiler cabinet losses	No space heat
Intended communication with the house:	Inside the building envelope	Inside the building envelope	Outside the building envelope
<u>2. RETROFITS</u>			
Insulation: Perimeter?	YES	Dependent on occupant usage	NO
Basement? (optional based on NEAT)	<p>NOTE: Do not insulate basement walls that are below the ground surface level with any product where you can not ensure an air barrier, as the flow of moisture behind the insulation may tend to encourage mold growth.</p> <p>We learn that all wall components require a surface exposure to drying potential, either to inside or outside. Basement wall surfaces below grade level need to have the opportunity to “dry to the inside”.</p>		
Floor? Ducts/Boiler Pipes? Water Pipes?	NO NO NO	NO NO NO	YES YES YES: if danger of freezing
Air Leakage Seal envelope leaks?	To outside	To outside	To both in and outside
Duct leaks: Seal returns? Seal supplies?	YES NO	YES based on tests	YES YES
Ventilation?	NO	NO	NO: if dry, well drained & vapor barrier present YES: if moisture is present

Note closeable rooms containing supply registers and no returns. Note whether the central return is located in a room with a closeable door. Note the customer's door closing habits. Discuss with the customer the importance of having an uninterrupted air flow from the supply registers to the return registers.

door closing
201-5.1j

CEE

GRAVITY DISTRIBUTION SYSTEM 201-5.2

Note the locations of the registers in each room. Note any blocked or covered registers, and have them unblocked. Explain to the customer why this is important. Note the location of any registers outside the heated area or in other inappropriate locations. Consult with the customer about appropriate corrective measures.

**register locations
and blockage**
201-5.2a

CEE

Note the presence and condition of any suspected asbestos on the ductwork. Follow safe work practices when in the presence of asbestos. Do not disturb friable asbestos (see 114-1.4a).

asbestos
201-5.2b

!

Inspect for duct leakage locations. Note any sections of ductwork that are missing or disconnected, severely corroded, rusted through, or punctured.

duct leak inspection
201-5.2c

Note any sections of ductwork that are crushed or resisting air flow. Note any areas of return duct restriction.

obstructions
201-5.2d

Inspect the return duct system and record any sections of ductwork that are missing, loose, unsealed, rusted through, or punctured. Identify gaps, holes or other problems in panned floor joist returns.

return ducts
201-5.2e

Inspect the supply duct system and record any sections of ductwork that are missing, loose, unsealed, rusted through, or punctured.

supply ducts
201-5.2f

Note the presence of ducts passing through non-conditioned spaces (see Table 201-5). Note the existence of any duct insulation. Determine if any insulation is needed and record measurements and the amount needed.

duct insulation
201-5.2g

BOILER DISTRIBUTION SYSTEM 201-5.3

Locate all water lines. Inspect for water leakage.

**distribution water
lines**
201-5.3a

pipe insulation
201-5.3b

CEE

Check for the presence of insulation on the heat distribution pipes. Consult with the customer about the usage patterns of the area to determine if water lines should be insulated.

**heat transfer fins,
radiators**
201-5.3c

Inspect heat transfer fins and radiators, noting their condition and the presence of leaks and/or dirt.

bleeder valves
201-5.3d

Inspect all bleeder valves for signs of leakage.

zone valves
201-5.3e

Check for the presence of zone valves. Inspect all zone valves for leaks and corrosion. If it is the heating season, test the zone valves to see if they work.

ELECTRIC BASEBOARD DISTRIBUTION SYSTEM 201-5.4

heat transfer fins
201-5.4a

CEE

Note and record the location of electric baseboard heaters. Inspect the heat transfer fins, noting their condition and the presence of dirt, bends or kinks. Discuss with the customer the importance of keeping the fins clean and that the heaters should not be blocked with furniture or other objects.

“CLEVELAND DROPS” 201-5.5

building code authority
201-5.5a

Return air duct work must always be connected to the furnace unless the building department having jurisdiction over the exact dwelling where the return air ducts are not connected to the furnace specifically allows for this to occur.

burden of proof
201-5.5b

Copies of specific building codes or municipal regulations, ordinances, rules, codes or laws must be included in the HWAP client file of any dwelling where this exception is used.

evidence of moisture
201-5.5c

If evidence of moisture or standing water or molds are present in the basement or crawlspace, then the return air ducts must be connected to the furnace. A ground cover must be installed on any exposed earth.

**pressure test of the
CAZ**
201-5.5d

In any dwelling where these exceptions may be used, a pressure test of the combustion appliance zone (CAZ) with reference to the outside (see 1506-4) must be performed during the initial and final inspections.

In any dwelling where there are atmospherically-drafted appliances in the combustion appliance zone and the pressure is -5 Pa or above with reference to the outside, the return air ducts must be connected to the furnace, regardless of local code.

allowable pressure readings
201-5.5e

In any dwelling where there are fan-induced combustion appliances in the combustion appliance zone and the pressure is -10Pa or above with reference to the outside, the return air ducts must be connected to the furnace, regardless of local code.