

## INSULATION AND VENTILATION

### SCOPE OF THE INSULATION & VENTILATION INSPECTION: 266CMR: BOARD OF REGISTRATION OF HOME INSPECTORS

#### 266 CMR 6.00: STANDARDS OF PRACTICE:

##### 6.10 System: Insulation and Ventilation

##### (1) The **Home Inspector** shall **Observe**:

- (a) Exposed insulation in unfinished spaces.
- (b) Ventilation of attics and crawl space areas.
- (c) Bathroom venting systems.
- (d) The ventilation of under floor crawl spaces.

##### (2) The **Home Inspector** shall **Report On**:

- (a) The absence of insulation in unfinished spaces at conditioned surfaces and recommend repair (if needed).
- (b) The type of ventilation in the attic space (None, ridge, soffit, area, power vent, gable, eave, mushroom, turbine, other) and recommend repair (if needed)
- (c) The existence and or absence bathroom ventilation other than a window(s) and recommend repair (if needed).
- (d) The absence of ventilation of an under floor crawl space and recommend repair (if needed)

##### (3) The **Home Inspector** is not required to **Report On**:

- (a) The type of insulation
- (b) Concealed insulation and vapor retarders.
- (c) Venting equipment which is integral with household appliances.

**DISCLAIMERS:** The following items are **EXCLUDED** from this report: A. Concealed insulation and vapor retarders. B. Venting equipment which is integral with household appliances. C. Inaccessible unfinished spaces. D. Spaces or problems concealed by stored goods.

**GENERAL COMMENTS:** A. FREE or inexpensive **ENERGY AUDITS** by local utility companies are recommended to further identify & estimate areas in need of energy saving improvements. **Visit [www.masssave.com](http://www.masssave.com)** B. YOU should re-inspect the attic space after the owner has removed all possessions as hidden problems may exist. C. New homes are now required to have a light in the attic. D. New homes are required to have a vapor barrier of 1.0 perm or less installed on the warm side of walls, ceilings and floors enclosing a conditioned space. E. Typical insulation requirements for residential applications include: Ceilings (R = 30) 9" fiberglass or equivalent, walls & basement (R = 12.5) 3 1/2" fiberglass or equivalent. F. Typical ventilation requirements for new residential applications include: Attics with a ceiling vapor barrier shall have a screened opening of at least 1 SF of free vent area for each 300 SF of ceiling space. Attics without a ceiling vapor barrier shall have a screened opening of at least 1 SF for each 150 SF of ceiling area. G. **Buyers should ask the owner about any prior roof leakage and should monitor the attic to determine if corrective action is needed.** Be advised that active roof or flashing leaks can occur at anytime regardless of the age or condition of the roof coverings and flashings. H. **DISCLAIMER: Inspection for MOLD is EXCLUDED from this report..** I. **NOTICE: UNLESS THE ATTIC WAS VIEWED DURING RAIN, NO GUARANTY AGAINST ROOF LEAKS IS IMPLIED. YOU should monitor the attic area for signs of roof or flashing leakage after heavy rain or snow conditions.** The Massachusetts Standards require that the inspector "Enter *readily accessible* under floor crawl spaces and attic spaces only after safe access has been provided by the owner and or client except when access is obstructed, when entry could damage the property, or when dangerous or adverse situations are suspected by the inspector."

### 1. ACCESS:

#### METHOD USED TO OBSERVE

#### ATTIC:

Observation: The attic was entered via a set of stairs. (Note: To prevent heat loss, doors leading to an attic should be weatherstripped & insulated. Attic stairs should have a handrail & gallery rail if applicable.)

**IS AN ATTIC  
LIGHT  
PRESENT?**

Yes, an attic light is present.

**2. SIGNS OF ATTIC WATER PENETRATION:**

**EVIDENCE OF  
LEAKS OR  
CONDENSATION  
PROBLEMS:**

Observation: Wet stains were visible in the *readily accessible* parts of the attic at time of inspection.

Analysis: Active leakage is suspected, further investigation and repairs are needed.

Note: There is a potential for concealed damage. Be advised that any source of water penetration or ventilation imbalance can cause interior damage and / or mold.

Recommendation: You should ask the owner to disclose any known roof or flashings leakage problems. A licensed roofing contractor should be hired to further identify the source of the suspected leak and repaired as determined.

Observation: Moist water stains were noted adjacent to the plumbing vent pipe within the attic.

Analysis: In my opinion, the stains indicate that the flashing boot around the plumbing vent pipe is leaking at the roof. Further investigation and repairs are needed. Be advised that any source of water penetration or ventilation imbalance can cause interior damage and / or mold. Note: There is a potential for concealed damage.

Recommendation: You should ask the owner if he or she has any knowledge of past roofing or flashing leakage problems or repairs? Hire a roofer to repair the flashing and monitor for future leakage.

Observation: Water stains are present of the roof framing beneath or adjacent to the attic ridge vent.

Analysis: Ridge vents are vulnerable to wind driven rain leakage. Be advised that any source of water penetration or ventilation imbalance can cause interior damage and / or mold.

Recommendation: I advise that you ask a roofer to perform a closer on-roof inspection to determine the true condition of the ridge vent and the brand installed. In my opinion, a quality ridge vent will have a baffle on each side to deflect wind and water away and a matching square footage of soffit ventilation. If the present type of ridge vent has no baffles, then I recommend replacement.

Observation: There is a potential for leakage at:

Chimney flashing

Analysis: Leaks may cause interior water damage. Be advised that any source of water penetration or ventilation imbalance can cause interior damage and / or mold.

Note: There is a potential for concealed damage.

Recommendation: Potential leakage points should be reappraised by applicable tradesmen and corrected as required.

**3. VENTILATION:**

**TYPE OF ATTIC VENTILATION:**

Observation: The attic space is vented by the following means:

Ridge & soffit vent (Note: This is an indication of a modern attic ventilation system).  
Gable end louver vents

**CONDITION:**

\* **FUNCTIONAL.** Observation: No visible problems observed where *readily accessible* at time of inspection.

**ATTIC VENTILATION PROBLEMS:**

Observation: The attic is ventilated by both gable end louver vents and a modern ridge vent system.

Analysis: The gable vents may have been original and the ridge vent system may be a renovation. Be advised that for a ridge vent system to function properly, air must enter the soffit vents or vented drip edge flashing, flow upward between the rafters and then vent through the ridge vent to the atmosphere. The two gable end louver vents should NOT be present as air entering through the vents will impair the function of the ridge vent by reducing a positive draft. In short, the gable vents short-circuit the desired air movement for ridge vent function. Simple repair is needed.

Recommendation: You should hire a tradesman to block the gable end louver vents from within the attic.

**CONDITION OF FOUNDATION / CRAWL SPACE VENTILATION:**

Not applicable with this structure.

**CONDITION OF KITCHEN VENTILATION:**

\* **FUNCTIONAL.** Observation: No visible major problems observed where *readily accessible*.

**CONDITION OF BATHROOM VENTILATION:**

Observation: The bathroom is ventilated by a window and an exhaust fan.

**CONDITION OF DRYER VENTILATION:**

\* **FUNCTIONAL.** Observation: No visible problems observed where *readily accessible*.

**4. INSULATION IN UNFINISHED SPACES:**

**ATTIC:**

Suspected types of exposed and *readily accessible* attic insulation:  
Fiberglass batt type insulation present.

**BASEMENT /  
CRAWL SPACE:**

Observation: The basement is partly finished.

Analysis: Due to the wall and/or ceiling coverings, the unfinished surfaces were not *readily accessible* for inspection. Therefore, the presence or non-presence, type(s) and condition of insulation and vapor barriers is undetermined. Further investigation is needed.

Recommendation: You should ask the owner to disclose any knowledge of insulation and vapor barriers behind the finished walls and ceiling materials. You may also elect to contact the local utility company and schedule an inexpensive "energy audit" of the entire home, to determine where insulation improvements are needed, approximate cost and potential savings in heating and cooling expenses.

Observation: Where *readily accessible*, the unfinished basement or crawl space has no insulation.

Analysis: While the lack of basement or crawl space insulation may be typical for the older home, the omission will increase fuel consumption and will reduce comfort levels.

Optional insulation upgrading is advised.

Recommendation: I advise that you hire an insulation contractor to install fiberglass batt type insulation between all floor joists in accordance with the requirements of the building code.

Web Resources: U.S. DOE website [www.ornl.gov/%7eroofs/zip/ziphome.html](http://www.ornl.gov/%7eroofs/zip/ziphome.html) (Zip Code Insulation Program)

<http://www.eere.energy.gov/buildings/info/documents/pdfs/26455.pdf>

<http://www.eere.energy.gov/buildings/info/documents/pdfs/29238.pdf> Crawl space

Observation: As mentioned earlier the home has exterior rigid insulation installed on the foundation all the way up above ground to the siding.

Analysis: This is a positive feature for energy efficiency but a negative in regards to pest infestation. Carpenter ants love to make there nests in this stuff and termites like it because they don't have to go to the trouble of making mud tubes.

Recommendation: I would have the insulation cut back to the surface of the ground or at least a 2 inch vision strip that would allow you to see and pest activity. Right now you have no way of knowing what is going on behind that insulation. I would also recommend an inspection and annual service by a pest company to be proactive rather than reactive. Most of the basement interior is not readily visible for inspection so preventive maintenance is advised.

**WALLS where  
exposed:**

Observation: There were no unfinished wall spaces *readily accessible* at time of inspection.

Analysis: The presence and condition of any insulation within the wall spaces is undetermined. **Be advised that homes built before the 1950's were most often constructed without insulation in the exterior walls.** While the lack of insulation may be typical for a home of this era, heat loss will be excessive as compared to new construction, making the home more expensive to heat.

Recommendation: You should question the owner about any known wall insulation. To precisely identify wall insulation, it is necessary to remove part of the wall covering such as in a closet, and then patch the wall afterwards. If your research reveals the absence of wall insulation, then an energy audit and insulation updating are advised for energy conservation and comfort. You may desire to seek estimates from an insulation contractor for blown-in loose fiberglass or loose cellulose within the exterior wall cavities.

Web resource on wall insulation: <http://www.eere.energy.gov/buildings/info/documents/pdfs/26451.pdf>

**5. VAPOR BARRIERS IN UNFINISHED SPACES:**

**VAPOR BARRIER  
PRESENT OR  
ABSENT IN  
UNFINISHED  
SPACES?**

\* **FUNCTIONAL** vapor barrier where exposed and *readily accessible*.

**6. OVER-ALL CONDITION / RECOMMENDATIONS:**

**Insulation /  
ventilation  
summary:**

Observation: Insulation or ventilation problems or upgrades are documented above.

Analysis: Insulation and ventilation problems can lead to imbalance conditions resulting in air quality problems, mold, decay, pest infestation and energy waste.

Recommendation: The above problems should be repaired or upgraded. Consult appropriate insulation or ventilation tradesman for cost estimates.