

Plan Review Checklist

Attic conversion to habitable space

1 & 2 Family Residential

9th edition , Massachusetts with 2021 IECC Review

*Stretch Code Requirement
performance option please provide
the projected HERS rating from the
Accredited HERS Rater that you hire.*

Plan Review Checklist

This document provides general guidance on the required documentation for a plan review. Depending on your project, some details may not be applicable. This checklist is intended to help you prepare for your plan review and streamline the process of obtaining a building permit.

If you have any questions, please contact the Hudson Building Department at (978) 568-9625. We would gladly arrange a meeting to address your questions and concerns.

2021 International Energy Conservation Code

TABLE R402.1.2 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT ^a

CLIMATE ZONE	FENESTRATION U-FACTOR ^b	SKYLIGHT ^b U-FACTOR	GLAZED FENESTRATION SHGC ^{b, e}	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE ⁱ	FLOOR R-VALUE	BASEMENT ^c WALL R-VALUE	SLAB ^d R-VALUE & DEPTH	CRAWL SPACE ^c WALL R-VALUE
1	NR	0.75	0.25	30	13	3/4	13	0	0	0
2	0.40	0.65	0.25	38	13	4/6	13	0	0	0
3	0.32	0.55	0.25	38	20 or 13+5 ^h	8/13	19	5/13 ^f	0	5/13
4 except Marine	0.32	0.55	0.40	49	20 or 13+5 ^h	8/13	19	10/13	10, 2 ft	10/13
5 and Marine 4	0.30	0.55	NR	49	20 or 13+5 ^h	13/17	30 ^g	15/19	10, 2 ft	15/19
6	0.30	0.55	NR	49	20+5 ^h or 13+10 ^h	15/20	30 ^g	15/19	10, 4 ft	15/19
7 and 8	0.30	0.55	NR	49	20+5 ^h or 13+10 ^h	19/21	38 ^g	15/19	10, 4 ft	15/19

Three sets of plans or electronically uploaded on-line

Construction Drawings

Cover Sheet

- o Address with Assessor Map and Parcel
- o Date of latest revision
- o Tabulated Square Foot Area of all proposed renovation (and spaces if applicable)

Construction documents ($\frac{1}{4}$ " scale minimum)

- o Floor Plan area of work is being performed
- o Building dimensions Space designation – (ie: living room, kitchen, bedroom, storage, etc.)
- o Demonstrate light and ventilation compliance §R303.1
- o Door and window location per schedule on cover sheet, identifying egress windows and safety glazing including manufacturers specifications cut sheets on each type. Doors between condition & un-condition space be labeled solid and weather stripped.
- o Location and type of smoke detectors and carbon monoxide detectors & completed install permit co-smoke application under Building Department portal
- o Emergency escape and rescue required. Basements, habitable attics and every sleeping room shall have at least one operable emergency escape and rescue opening

Framing plan

- o Conventional framing plan all levels including roof, showing size, spacing and direction of structural members
- o Conventional header and beam sizes, spans and bearing clearly showing load path to foundation (ie: doorways, windows, archways, overhead doors, covered porches and decks and structural ridges)
- o Engineered floor framing and roof truss plans stamped by a professional registered engineer in the Commonwealth of Massachusetts.
- o Engineered manufactured beams and columns stamped by a registered professional engineer in the Commonwealth of Massachusetts. Calculations shall be site specific verifying they generated the loads indicated and that the input and output data provided is site specific to include verification of load path and column adequacy to foundation...disclaimers of any kind shall be rejected.

Cross sections

- o Complete cross section of all sections of building, detailing method of construction.
- o Stair detail showing type of material, rise and run, headroom height, handrail and guardrail.
- o Floor - finished ceiling height.

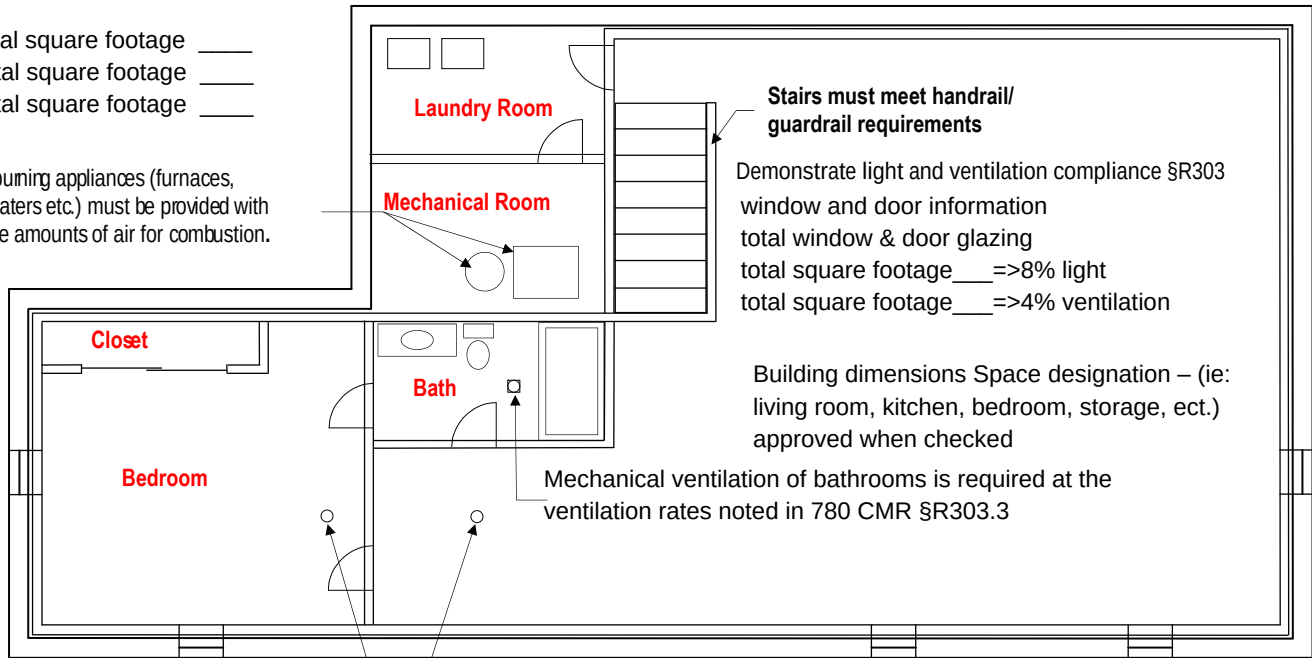
Completed Mechanical Application

- Identify the location and supply spec's of required mechanical ventilation of bathrooms at the ventilation rates noted in 780 CMR §R303.3
- 2015 IECC R403.5 Mechanical ventilation (Mandatory). Location of unit must be marked on plans Specification along with installation manual must be submitted.
- If utilizing existing equipment, you MUST submit a heat loss calculation showing existing loads and also proposed new loads (manual J)
- Heating system location, size (BTU), location of fuel source and method of combustion air make-up (manual S)
- Solid fuel burning appliance location, size, installation manual and method of combustion air make-up
- Location of ductwork...if installed in exterior wall, the Energy Conservation Application Form noted above must reflect decreased R-value or indicate method of maintaining exterior wall integrity (manual D)
- Complete mechanical permit

Typical Attic Conversion to Habitable Space

total square footage _____
 8% of total square footage _____
 4% of total square footage _____

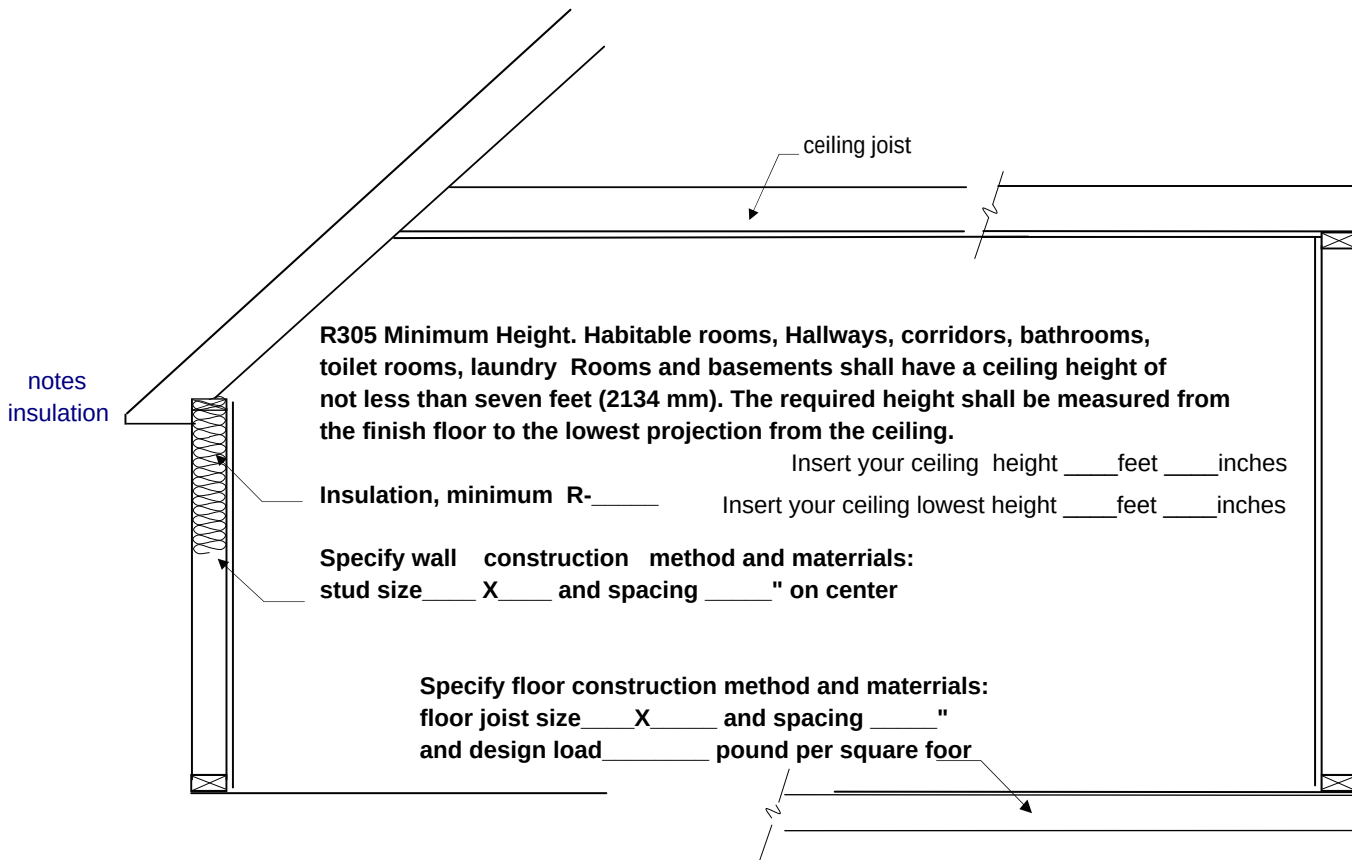
All fuel burning appliances (furnaces, water heaters etc.) must be provided with adequate amounts of air for combustion.

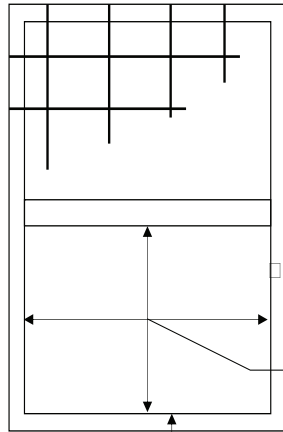


All sleeping rooms must have an emergency escape window. § R310
 See detail on next page

§ AJ102.3 Smoke Heat Detection and Carbon Monoxide Alarm Systems and CO Detection and Alarm.
 When one or more sleeping rooms are added or created in existing dwellings, the entire existing building shall be provided with smoke detectors, heat detector and carbon monoxide detectors designed, located and installed in accordance with the provisions for new construction, 780 CMR § R 314, as applicable.

FLOOR PLAN FOR ATTIC FINISH





§ R310 Minimum Opening Area.

All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet.

- Exceptions:
1. Grade floor openings shall have a minimum net clear opening of five square feet (0.465 m²).
 2. Double hung windows used for emergency escape shall be permitted to have a net clear opening of 3.3 square feet (0.31 m²) provided that at least one operable sash meets the minimum height and width required by 780 CMR § R310.1.2 and § R310.1.3 and operational constraints defined by 780 CMR § R310.1.4.

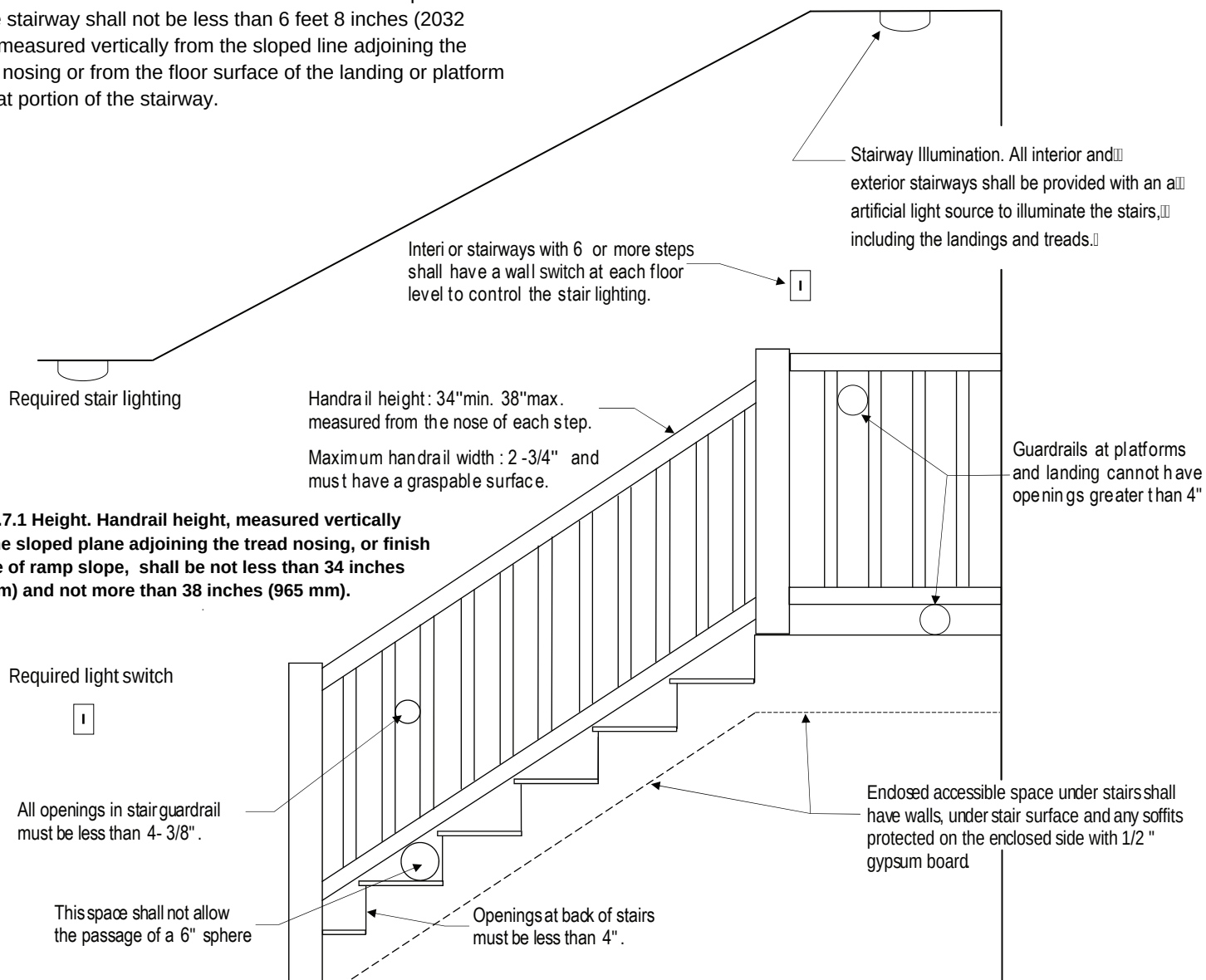
" (insert your sill height)

44" Max. sill height for egress (bedroom)
windows measured from floor to top of sill

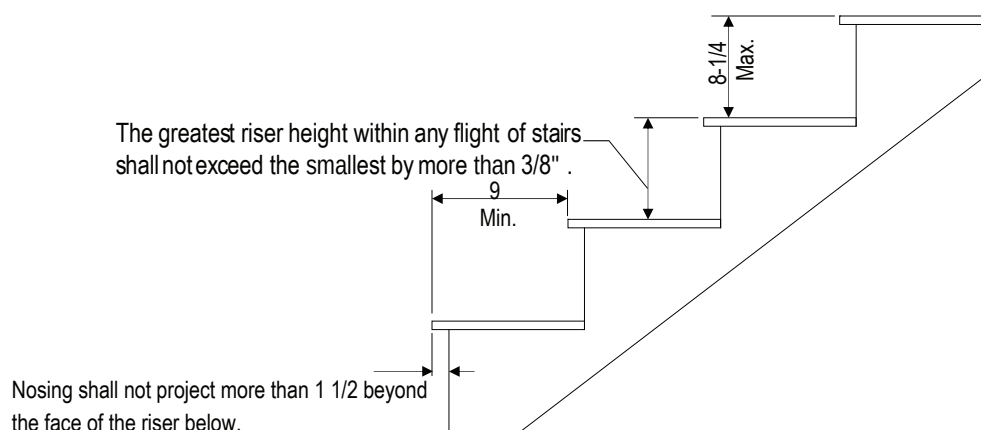
Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys, tools or special knowledge.

EMERGENCY ESCAPE WINDOW DETAIL

R311.7.2 Headroom. The minimum headroom in all parts of the stairway shall not be less than 6 feet 8 inches (2032 mm) measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway.



INTERIOR STAIR DETAIL



TREAD AND RISER DETAIL

CHECKLIST FOR APPLICATION CHECKLIST

1. Owner's Authorization Form Completed
2. Signed contract between homeowner and the registered home improvement contractor subject to MGL c 142
3. In lieu of submitting a signed contract as the owner of record, the owner shall submit Signed Affidavit for Home Improvement Contractor Required Contract Terms
4. Electronic Set of plans for the building or structure
5. Mechanical Application (If applicable)
6. Smoke Detector Application (co-smoke application under Building Department portal)
7. Sprinkler install approval, which must include a Fire Protection Narrative Tier 1 at a minimum, for cost effectiveness you may include Tier 2 for review simultaneously for review
8. Copies of Variances or Special Permits Granted by The Planning Board of Zoning Board of Appeals or any other Town Boards
9. Worker's Compensation Certificate
10. Insurance Binder from Insurance Company made out to the Town
11. Homeowner License Exemption (If applicable)
12. Copy of Construction Supervisor License
13. Copy of Home Improvement Registration (If applicable)
14. Statement for disposal of debris (If applicable)
15. Massachusetts Energy Compliance Report

1 "Whoever is aggrieved by an interpretation, order, requirement, direction or failure to act by any state or local agency or any person or state or local agency charged with the administration or enforcement of the state building code or any of its rules and regulations, except any specialized codes as described in section 96, other than the specialized stretch energy code developed and promulgated by the department of energy resources, may within forty-five days after the service of notice thereof appeal from such interpretation, order, requirement, direction, or failure to act to the appeals board. Appeals hereunder shall be on forms provided by the appeals board and shall be accompanied by such fee as said appeals board may determine." G. L. c. 143, § 100, second paragraph (effective as of June 24, 2021).

Natural Light and Ventilation Worksheet

Space Designation	Floor Area Square Feet	Light (8% Required)	Light (Actual)	Ventilation (4% Required)	Ventilation (Actual)

Natural and Mechanical Ventilation:

Each habitable room must be provided with natural ventilation through open screened window or door areas that total at least 4% of the floor area of the room. As an alternative, the code permits mechanical ventilation. Most major manufacturers of ventilation equipment offer balanced supply and exhaust fan units for this purpose. Simple exhaust fans are not permitted since the resulting negative house air pressure is a safety hazard and infiltration is insufficient. Another code permitted alternative is to provide outside air directly into the return air plenum of a forced air HVAC unit in the required amount of 15 CFM per bedroom plus 15 CFM. Mechanical ventilation equipment manufacturer's specifications must be provided. (AJ501.6)(2009 IRC, R303)

Equation below is how to convert square inches to square footage

1st Equation is for natural light (8%)

$37 \text{ inches} \times 57 \text{ inches} = 2,109 \text{ square inches} / 144 = 14.65 \text{ square footage}$

2nd Equation is for natural ventilation (4%)

$33.87 \text{ inches} \times 24.50 \text{ inches} = 828.8 \text{ square inches} / 144 = 5.76 \text{ square footage}$

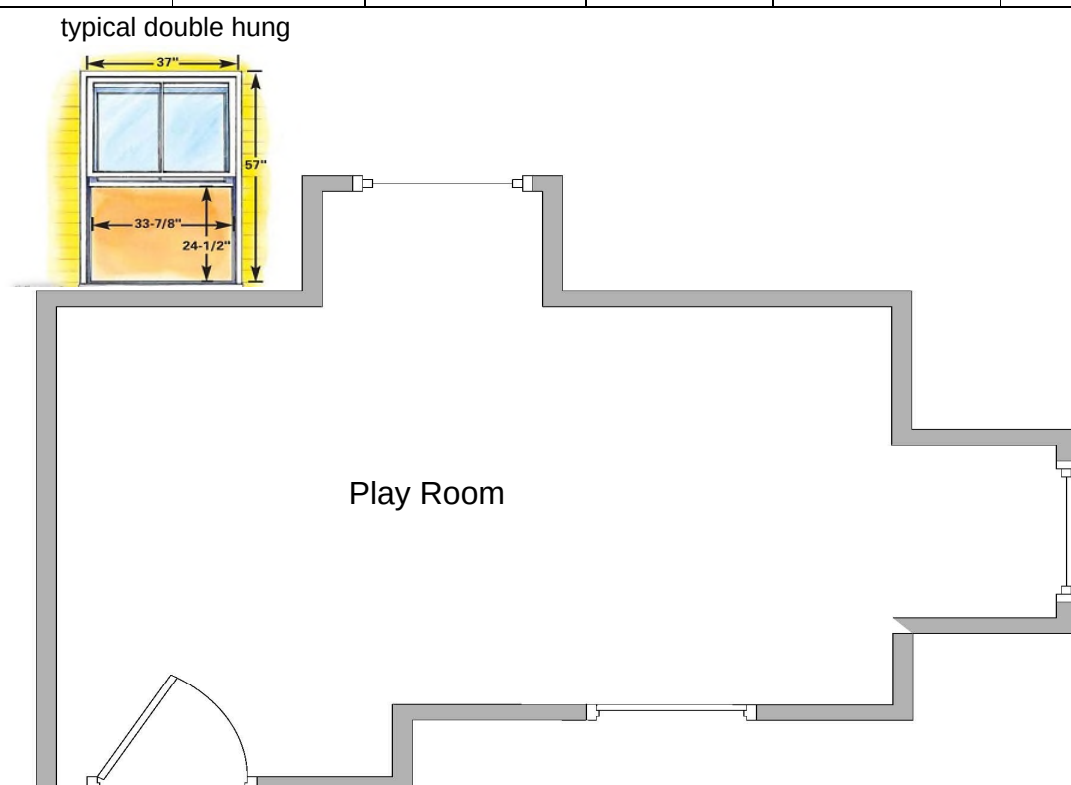
This space has three windows one door with no screen.

Natural light would be each window 14.65 time three window equals 43.95 square feet

Natural ventilation would be each window 5.76 times three windows equals 17.28 square feet

example of natural light and ventilation work sheet

Space Designation	Floor Area Square Feet	Light (8% Required)	Light (Actual)	Ventilation (4% Required)	Ventilation (Actual)
Play Room	336	26.88	43.95	13.44	17.28



SECTION R314 SMOKE ALARMS

R314.1 Smoke detection and notification. All smoke alarms shall be listed in accordance with UL 217 and installed in accordance with the provisions of this code and the household fire warning *equipment* provisions of NFPA 72.

R314.2 Smoke detection systems. Household fire alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required by this section for smoke alarms, shall be permitted. The household fire alarm system shall provide the same level of smoke detection and alarm as required by this section for smoke alarms. Where a household fire warning system is installed using a combination of smoke detector and audible notification device(s), it shall become a permanent fixture of the occupancy and owned by the homeowner. The system shall be monitored by an *approved* supervising station and be maintained in accordance with NFPA 72.

Exception: Where smoke alarms are provided meeting the requirements of [Section R314.4](#).

R314.3 Location. Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional *story* of the *dwelling*, including *basements* and habitable attics but not including crawl spaces and uninhabitable *attics*. In *dwellings* or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full *story* below the upper level.

When more than one smoke alarm is required to be installed within an individual *dwelling* unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

R314.3.1 Alterations, repairs and additions. When *alterations*, repairs or *additions* requiring a *permit* occur, or when one or more sleeping rooms are added or created in existing *dwelling*s, the individual *dwelling unit* shall be equipped with smoke alarms located as required for new *dwelling*s.

R314.5 Heat Detector. A single heat detector listed for the ambient environment shall be installed in:

1. Any integral garage ("garage under") or attached garage to the main house (detached garages do not require a heat detector).
2. A new addition attached garage to an existing dwelling. If the existing house contains a fire detection system that is compatible with the garage heat detector, then the detector shall be interconnected to the existing system. Where the existing fire detection system is not compatible with the garage heat detector, the garage heat detector shall be connected to a sounder (occupant notification appliance) or compatible heat detector containing a sounding device, located in the dwelling and within 20 feet (6096 mm) of the nearest door to the garage from the dwelling. The required garage heat detector is neither required to incorporate audible alarm notification nor is any audible notification device required in the garage.

R314.5.1 Heat Detector Placement. For flat-finished ceilings, the single heat detector shall be placed on or near the center of the garage ceiling. For sloped ceilings having a rise to run of greater than one foot in eight feet (305 mm in 2438 mm), the single heat detector shall be placed in the approximate center of the vaulted ceiling but no closer than four inches (102 mm) to any wall.

R315.1 Governing Regulations. Carbon monoxide alarms (alarms) for new construction and existing dwellings shall be furnished, installed and maintained by the owner in accordance with this section, M.G.L. c. 148, § 26F½, 527 CMR 31.00: *Carbon Monoxide Alarms*, 248 CMR, NFPA 720 and the manufacturer's instructions.

R315.2 Installation Locations. One alarm shall be installed on each story of a dwelling unit, including basements and cellars (but not including crawl

spaces and uninhabitable attics). When mounting a carbon monoxide alarm on a story with a bedroom, the alarm, shall be located outside of bedrooms but no further than 10 feet of any bedroom door. If a combination smoke/carbon monoxide alarm is used, its location must comply with this section.

R315.3 New Construction. Alarms shall either be an interconnected 120V or part of a low voltage combination system or wireless system. Alarms shall have secondary (standby) power from monitored batteries in accordance with NFPA 72. For fire alarm control units (panels) and wireless systems, the panel battery shall serve as the source of secondary power. Alarms shall be UL 2034 or UL 2075 listed, as applicable. Alarms may be interconnected with fire alarms providing they are compatible and the fire alarms take precedence.

R315.4 Existing Dwellings. For existing dwellings, carbon monoxide alarms shall be provided in accordance with Section 315 for new construction, as applicable, for the following circumstances:

1. When one or more bedrooms are added or created in a dwelling unit, the entire dwelling shall be provided with alarms.
2. When a dwelling unit undergoes complete reconstruction such that all walls and ceilings are open to framing the entire dwelling unit shall be provided with alarms.
3. In an existing two-family dwelling, when one or more bedrooms are added or created in both of the two dwelling units, the entire building shall be provided with alarms.
4. In a townhouse building when one or more bedrooms are added or created in a dwelling then that dwelling unit shall be provided with carbon monoxide alarms.
5. In a townhouse building when a dwelling unit undergoes complete reconstruction such that all walls and ceilings are open to framing, that dwelling unit shall be provided with carbon monoxide alarms.



The Commonwealth of Massachusetts
Department of Industrial Accidents
1 Congress Street, Suite 100
Boston, MA 02114-2017
www.mass.gov/dia

Workers' Compensation Insurance Affidavit: Builders/Contractors/Electricians/Plumbers.
TO BE FILED WITH THE PERMITTING AUTHORITY.

Applicant Information

Please Print Legibly

Name (Business/Organization/Individual): _____

Address: _____

City/State/Zip: _____ Phone #: _____

Are you an employer? Check the appropriate box:

- 1. ☐ I am a employer with _____ employees (full and/or part-time).*
- 2. ☐ I am a sole proprietor or partnership and have no employees working for me in any capacity. [No workers' comp. insurance required.]
- 3. ☐ I am a homeowner doing all work myself. [No workers' comp. insurance require]
- 4. ☐ I am a homeowner and will be hiring contractors to conduct all work on my property. I will ensure that all contractors either have workers' compensation insurance or are sole proprietors with no employees.
- 5. ☐ I am a general contractor and I have hired the sub-contractors listed on the attached sheet. These sub-contractors have employees and have workers' comp. insurance.
- 6. ☐ We are a corporation and its officers have exercised their right of exemption per MGL c. 152, §1(4), and we have no employees. [No workers' comp. insurance required.]

Type of project (required):

- 7. ☐ New construction
- 8. ☐ Remodeling
- 9. ☐ Demolition
- 10. ☐ Building addition
- 11. ☐ Electrical repairs or additions
- 12. ☐ Plumbing repairs or additions
- 13. ☐ Roof repairs
- 14. ☐ Other _____

*Any applicant that checks box #1 must also fill out the section below showing their workers' compensation policy information.

† Homeowners who submit this affidavit indicating they are doing all work and then hire outside contractors must submit a new affidavit indicating such.

‡ Contractors that check this box must attached an additional sheet showing the name of the sub-contractors and state whether or not those entities have employees. If the sub-contractors have employees, they must provide their workers' comp. policy number.

I am an employer that is providing workers' compensation insurance for my employees. Below is the policy and job site information.

Insurance Company Name: _____

Policy # or Self-ins. Lic. #: _____ Expiration Date: _____

Job Site Address: _____ City/State/Zip: _____

Attach a copy of the workers' compensation policy declaration page (showing the policy number and expiration date).

Failure to secure coverage as required under MGL c. 152, §25A is a criminal violation punishable by a fine up to \$1,500.00 and/or one-year imprisonment, as well as civil penalties in the form of a STOP WORK ORDER and a fine of up to \$250.00 a day against the violator. A copy of this statement may be forwarded to the Office of Investigations of the DIA for insurance coverage verification.

I do hereby certify under the pains and penalties of perjury that the information provided above is true and correct.

Signature: _____ Date: _____

Phone #: _____

Official use only. Do not write in this area, to be completed by city or town official.

City or Town: _____ Permit/License # _____

Issuing Authority (circle one):

1. Board of Health 2. Building Department 3. City/Town Clerk 4. Electrical Inspector 5. Plumbing Inspector
6. Other _____

Contact Person: _____ Phone #: _____

Information and Instructions

Massachusetts General Laws chapter 152 requires all employers to provide workers' compensation for their employees. Pursuant to this statute, an **employee** is defined as "...every person in the service of another under any contract of hire, express or implied, oral or written."

An **employer** is defined as "an individual, partnership, association, corporation or other legal entity, or any two or more of the foregoing engaged in a joint enterprise, and including the legal representatives of a deceased employer, or the receiver or trustee of an individual, partnership, association or other legal entity, employing employees. However the owner of a dwelling house having not more than three apartments and who resides therein, or the occupant of the dwelling house of another who employs persons to do maintenance, construction or repair work on such dwelling house or on the grounds or building appurtenant thereto shall not because of such employment be deemed to be an employer."

MGL chapter 152, §25C(6) also states that **"every state or local licensing agency shall withhold the issuance or renewal of a license or permit to operate a business or to construct buildings in the commonwealth for any applicant who has not produced acceptable evidence of compliance with the insurance coverage required."** Additionally, MGL chapter 152, §25C(7) states "Neither the commonwealth nor any of its political subdivisions shall enter into any contract for the performance of public work until acceptable evidence of compliance with the insurance requirements of this chapter have been presented to the contracting authority."

Applicants

Please fill out the workers' compensation affidavit completely, by checking the boxes that apply to your situation and, if necessary, supply sub-contractor(s) name(s), address(es) and phone number(s) along with their certificate(s) of insurance. Limited Liability Companies (LLC) or Limited Liability Partnerships (LLP) with no employees other than the members or partners, are not required to carry workers' compensation insurance. If an LLC or LLP does have employees, a policy is required. Be advised that this affidavit may be submitted to the Department of Industrial Accidents for confirmation of insurance coverage. **Also be sure to sign and date the affidavit.** The affidavit should be returned to the city or town that the application for the permit or license is being requested, **not** the Department of Industrial Accidents. Should you have any questions regarding the law or if you are required to obtain a workers' compensation policy, please call the Department at the number listed below. Self-insured companies should enter their self-insurance license number on the appropriate line.

City or Town Officials

Please be sure that the affidavit is complete and printed legibly. The Department has provided a space at the bottom of the affidavit for you to fill out in the event the Office of Investigations has to contact you regarding the applicant. Please be sure to fill in the permit/license number which will be used as a reference number. In addition, an applicant that must submit multiple permit/license applications in any given year, need only submit one affidavit indicating current policy information (if necessary) and under "Job Site Address" the applicant should write "all locations in _____(city or town)." A copy of the affidavit that has been officially stamped or marked by the city or town may be provided to the applicant as proof that a valid affidavit is on file for future permits or licenses. A new affidavit must be filled out each year. Where a home owner or citizen is obtaining a license or permit not related to any business or commercial venture (i.e. a dog license or permit to burn leaves etc.) said person is NOT required to complete this affidavit.

The Department's address, telephone and fax number:

The Commonwealth of Massachusetts
Department of Industrial Accidents
1 Congress Street, Suite 100
Boston, MA 02114-2017

Tel. # 617-727-4900 ext. 7406 or 1-877-MASSAFE
Fax # 617-727-7749
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