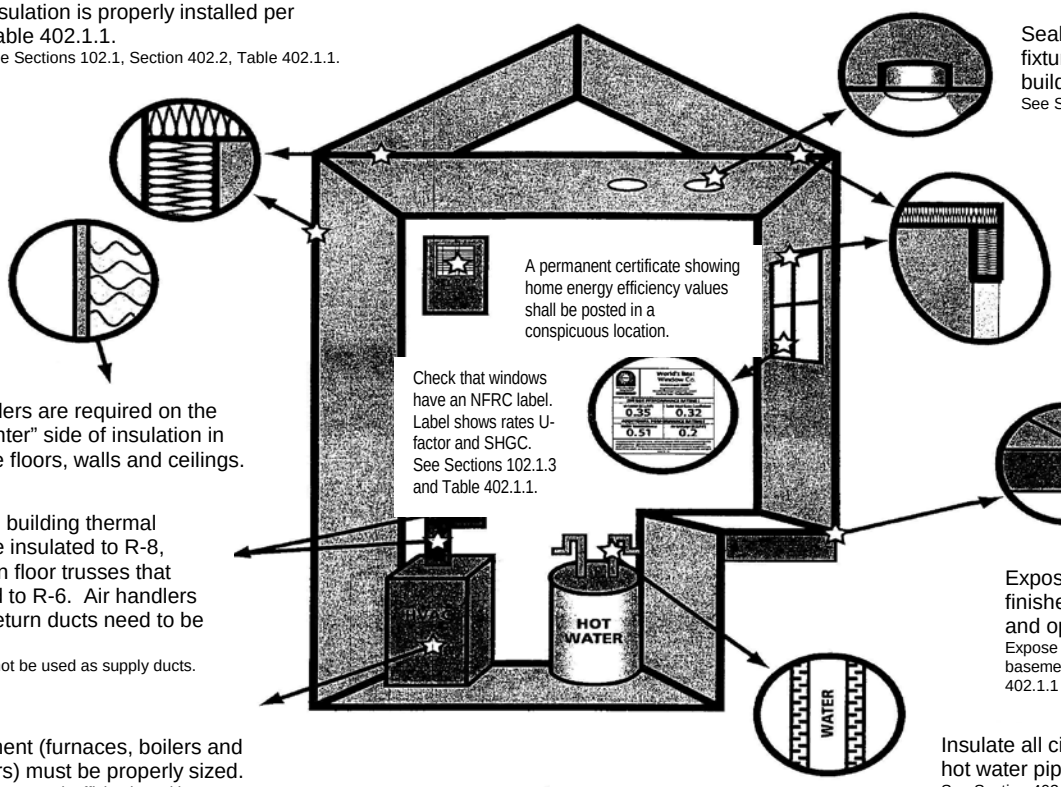
Town of Milliken

2009 International Energy Conservation Code
Residential Only

Make sure that the correct amount of insulation is properly installed per Table 402.1.1.
See Sections 102.1, Section 402.2, Table 402.1.1.



Seal all recessed lighting fixtures installed in the building thermal envelope.
See Section 402.4.3.

Air sealing is essential throughout the building thermal envelope.
Check for weatherstripping, gasketing, caulking and sealing or barrier material. See Section 402.4.1.

Vapor retarders are required on the "warm-in-winter" side of insulation in above-grade floors, walls and ceilings.

Ducts outside the building thermal envelope must be insulated to R-8, except for ducts in floor trusses that must be insulated to R-6. Air handlers and supply and return ducts need to be sealed.
Building cavities may not be used as supply ducts. See Section 403.2.

Exposed insulation shall be finished with a weather-resistant and opaque protective covering.
Expose insulation can be found on slabs, basements and crawlspaces. See Table 402.1.1 and Section 102.2.1.

HVAC equipment (furnaces, boilers and air conditioners) must be properly sized.
Oversized equipment runs inefficiently and is more costly. See Section 403.6.

Insulate all circulating hot water piping.
See Section 403.4.

One of the following methods shall be met:

1. Utilizing the prescriptive method in Table 402.1.1

2. Utilizing the REScheck program. Download the REScheck program www.energycodes.gov on the web. Submit the compliance worksheet (2 copies) with blueprints when applying for a building permit.

3. Simulated Performance Alternative. The Performance Path method requires the submittal of energy compliance documents and requires on site inspections to be performed by a "Resnet Certified Rater" and an Energy Compliance Certificate to be submitted prior to the Final Building inspection.

Simplified Insulation Requirement Single-Family Prescriptive Zone 5
Table 402.1.1

Glazing U-factor	Ceiling/Floor Over Outside Air	Wall	Floor	Basement Wall	Slab on Grade Perimeter	Crawlspace Wall
0.35 Max.	R-38 Min.	R-20 R13+5[a]	R-30[b] Min.	R-10/R-13 Min.[c]	R-10, 2 ft. Min.	R-10/R-13 Min.[c]

a. "13+5" means R-13 cavity insulation plus R-5 insulated sheathing
b. Or insulation sufficient to fill the framing cavity, R-19 minimum
c. The first R value applies to continuous insulation, the second to framing cavity insulation, either insulation meets the requirement

BUILDING ENVELOPE

1. Window and door schedule
2. Wall, roof and floor types (insulation)
3. Window *U*-factor 0.35

BUILDING THERMAL ENVELOPE

Building envelope shall be durably sealed to limit infiltration. The sealing methods between different materials shall allow for expansion and contraction. The following shall be caulked, gasketed, weatherstripped or otherwise sealed with an air barrier material, suitable film or solid material.

1. All joints, seams and penetrations
2. Site-built windows, doors and skylights
3. Openings between window and door assemblies and their respective jams and framing
4. Utility penetrations
5. Dropped ceilings and chases adjacent to thermal envelope
6. Knee walls
7. Walls and ceilings separating garage from conditioned spaces
8. Behind tubs and showers on exterior walls
9. Common walls between dwelling units
10. Other sources of infiltration

MECHANICAL REQUIREMENTS

1. Duct work outside the building envelope is required to be R-6 in floor joist cavity and R-8 in unconditioned space and is required to be sealed with mastic or other approved materials
2. Seal all joints according the Section M 1601.3.1 IRC
3. Seal all wall cavities in cold air returns
4. Heating and cooling equipment shall be sized according to Section M 1403.3 IRC

REQUIRED INSPECTIONS FOR BUILDING ENVELOPE

1. Foundation (Chapter 4 IECC)
    a. Verify perimeter slab insulation as shown on drawings
    b. Verify below grade insulation as shown on drawings
2. Frame (Chapter 4 IECC)
    a. Verify all joints at foundation are caulked
    b. Verify windows and doors meet *U*-factor requirement according to plans
    c. Verify weather resistive barrier and all flashing have been properly installed
3. Insulation (Chapter 4 IECC)
    a. Verify all frame requirements have been addressed
    b. Verify *R*-value of insulation has been applied according to plans submitted

    c. Verify floors have been insulated in unconditioned spaces and ventilation requirements have been met
    d. Verify walls of crawlspace or basement have been insulated according to plans
4. Electrical (Chapter 4 IECC)
    a. Verify all recessed lighting fixtures and electrical openings in the building thermal envelope have been sealed and installed to Section 402.4.3
5. Final Inspection
    a. Verify all corrections have been addressed
    b. Post insulation certificate in conspicuous location

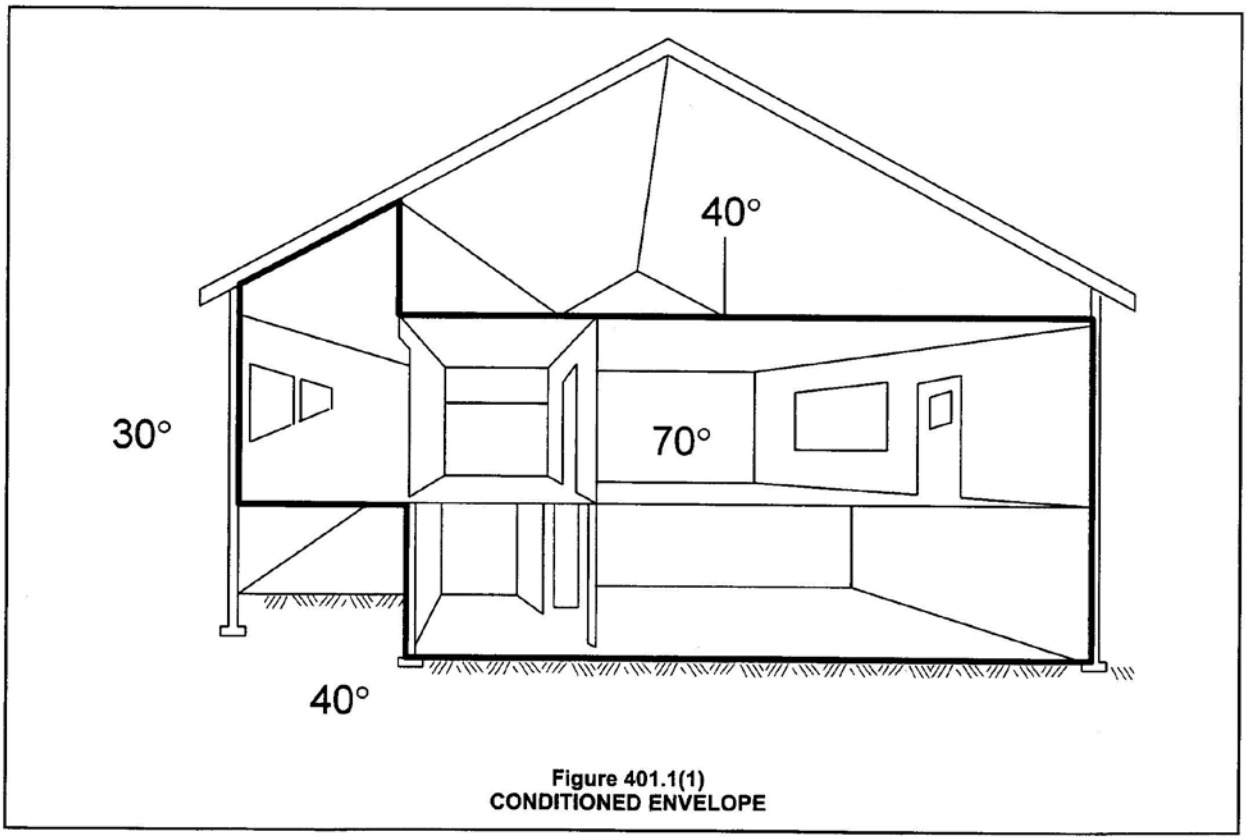


Figure 401.1(1)
CONDITIONED ENVELOPE

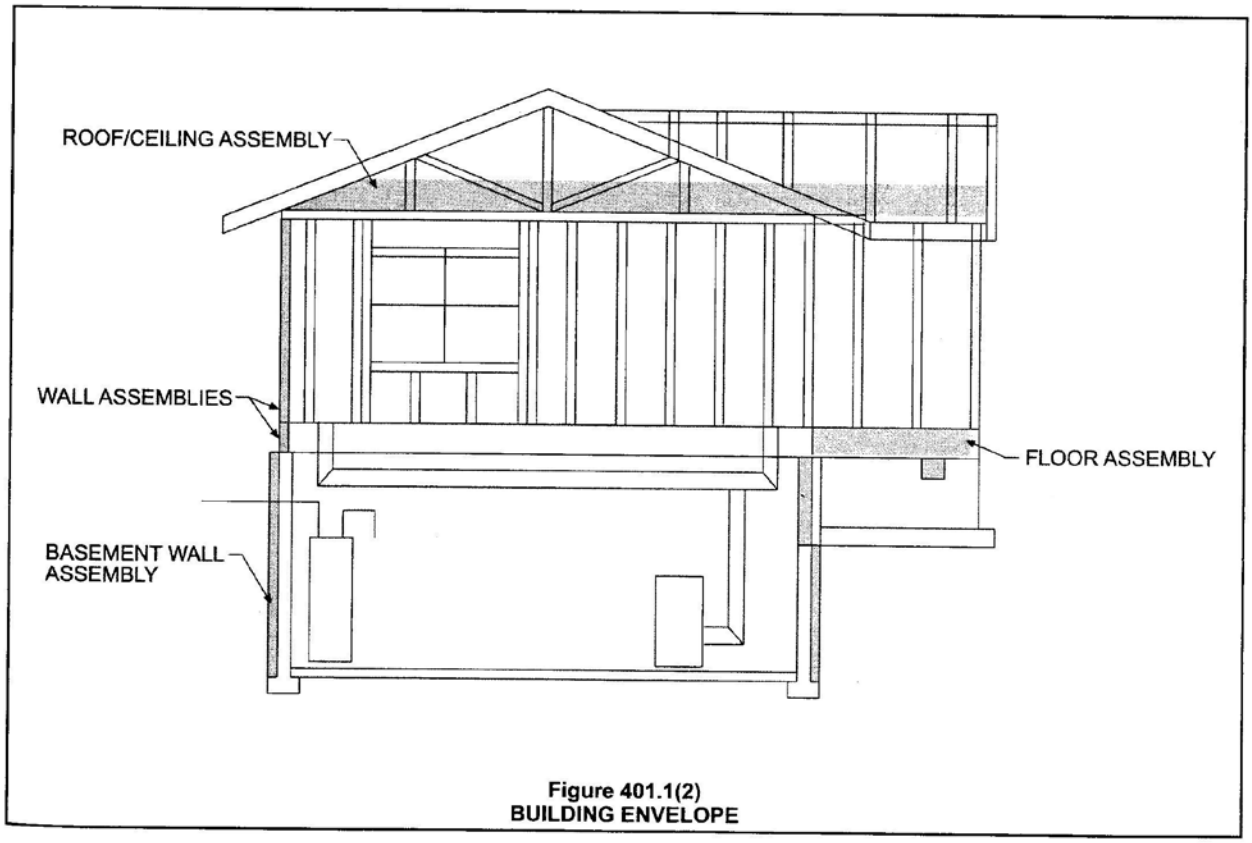


Figure 401.1(2)
BUILDING ENVELOPE

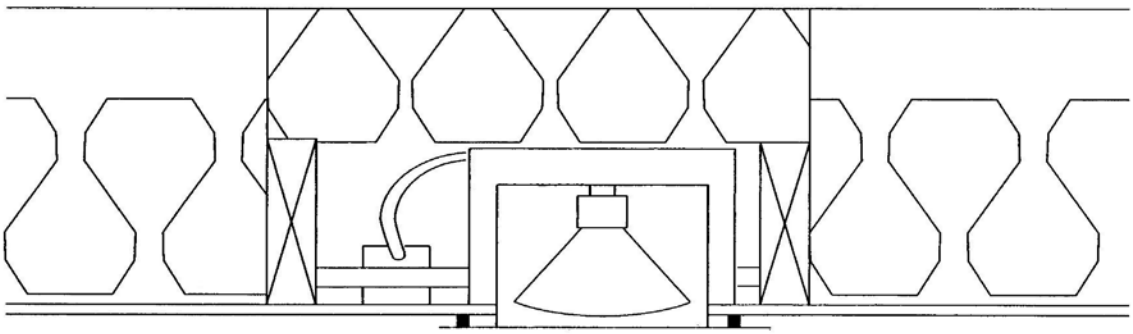


Figure 402.4.3
IC-RATED RECESSED LIGHT

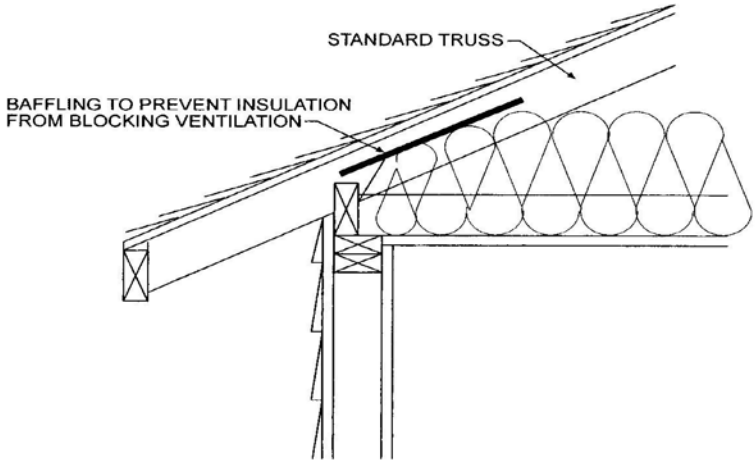


Figure 402.2.1(1)
TYPICAL ROOF ASSEMBLY

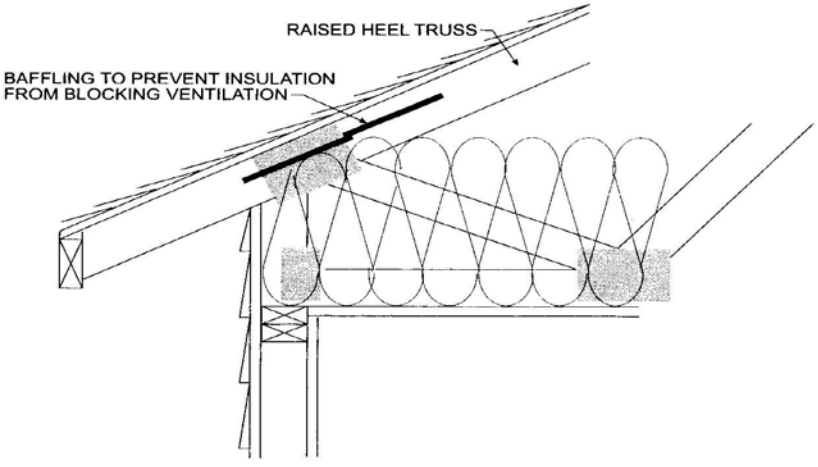


Figure 402.2.1(2)
RAISED-HEEL TRUSS

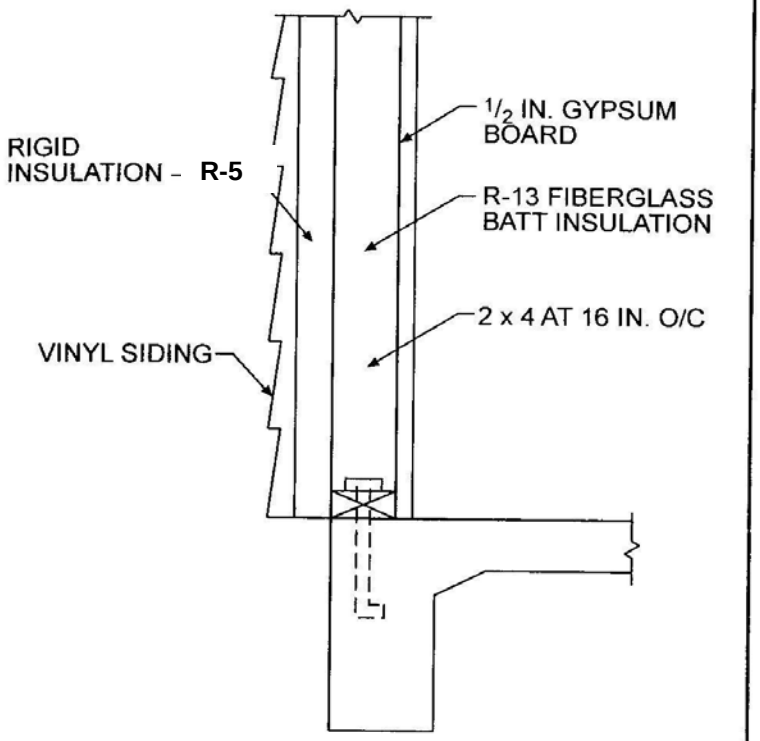
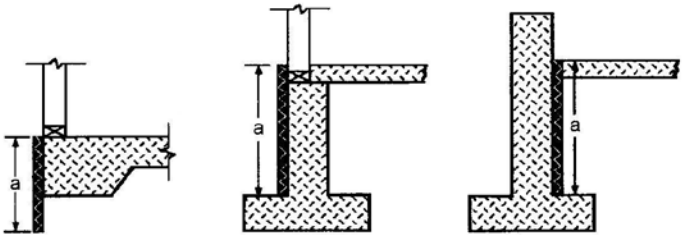
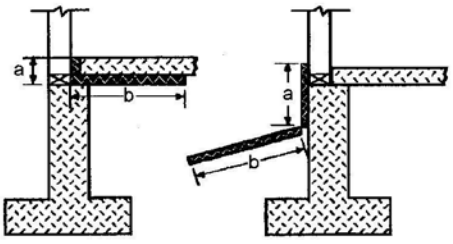


Figure 402.1.2
EXTERIOR *R*-VALUES

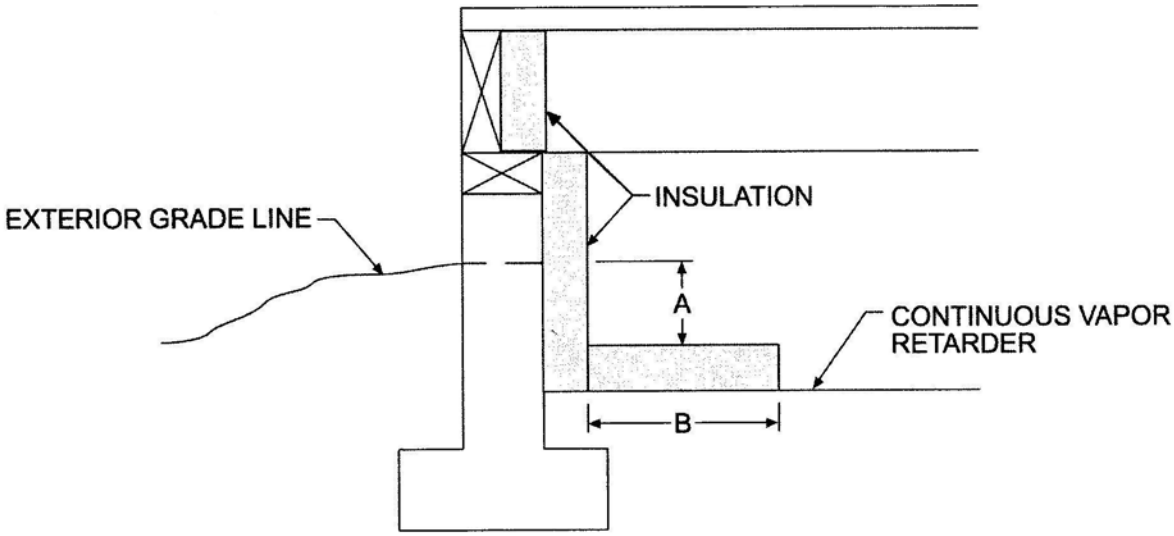


a = 24”



a + b = 24”

Figure 402.2.7
SLAB EDGE INSULATION METHODS



A + B ≥ 24 IN.

Figure 402.2.8
CRAWL SPACE WALL INSULATION

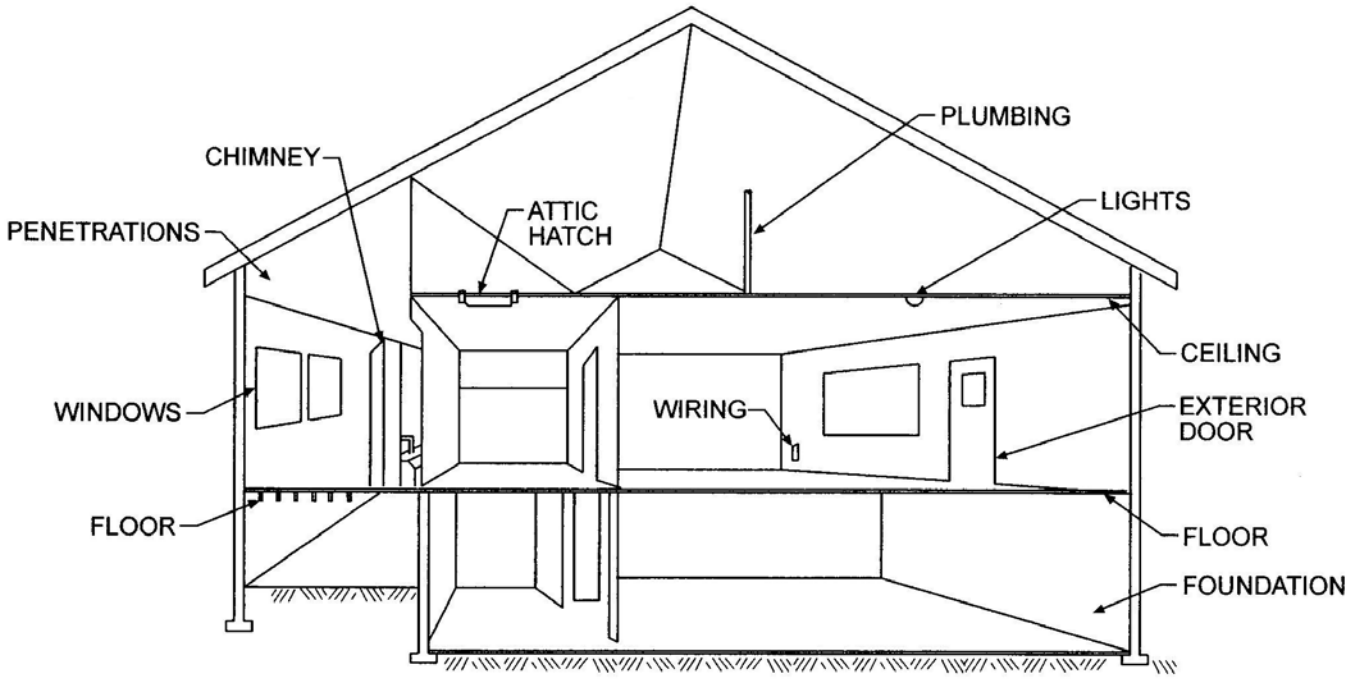


Figure 402.4
TYPICAL SOURCES OF AIR LEAKAGE IN THE HOME

102.1.3 Fenestration product rating. *U*-factors of fenestration products (windows, doors and skylights) shall be determined in accordance with MFRC 100 by an accredited, independent laboratory, and labeled and certified by the manufacturer.