

B-51

David Timberlake, P.E.
Chairman

Mary Fallin
Governor



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SEP 04 2015

Uniform Building
Code Commission

Oklahoma Uniform Building Code Commission

PUBLIC COMMENT FORM FOR THE ADOPTION OF BUILDING/CONSTRUCTION CODES PROPOSED CHANGE TO THE INTERNATIONAL RESIDENTIAL CODE®

INSTRUCTIONS: Please type or print clearly. Form must be signed. Any form not signed or filled out completely, may not be considered. Each requested change must be on a separate form.

1. Submitters Contact Information:

Name: Larry Cagle P.E. _____ Date: 9-1-15 _____
Company: Cagle Construction LLC _____
Address: 6701 E. Forest Ridge Blvd. _____
City: Broken Arrow _____ State: OK _____ Zip: 74014 _____
Phone: 918-408-7484 _____ Ext: _____ Fax: 918-357-5305 _____
Email: llcagle@cox.net _____

2. Do you feel this proposed change will increase the cost of construction? X Yes No

3. Which are of the code needs revision?

Section: (B-43) 1102.4.2.2 _____ Table: _____ Figure: _____
Page No: N/A _____

4. Please check the appropriate box:

X Revise as follows Delete as follows Add new text as follows Delete with substitute

Show the proposed NEW, REVISED, OR DELETED TEXT in legislative format, (line through text to be deleted and underline text to be added or revised).

N1102.4.2.2 Visual Inspection option. The items listed in the Residential Data Collection Checklist and Examples (Appendix ?) applicable to the method of construction, are field verified. Where required by the code official, or where the code official does not have adequate resources available, an *approved third party*, independent from the installer of the insulation, shall inspect the air barrier and insulation. The third party shall be a home energy rater certified by the Residential Energy Service Network (RESNET) or the Building Performance Institute (BPI). Where building sites are located over 100 miles from the nearest third party energy rater, the builder (remodeler or contractor) has the option to verify compliance using the Checklist. In all cases, the completed Residential Data Collection Checklist shall be submitted to the code official for final approval.

Supporting information: State purpose and reason for the change and provide substantiation to support proposed change.

Refer to N1102.4.2.2 Narrative below.

Randy Cayle

5. Signature: _____

Send completed "Public Comment Form" to:
Oklahoma Uniform Building Code Commission, PO Box 12540, Oklahoma City, OK 73157
Email to: Shawnta.Mitchell@oubcc.ok.gov or Fax to: 405-521-6504

N1102.4.2.2 Narrative:

During the August 12th Building Technical subcommittee meeting, it was decided to delete Chapter 11 of the 2015 International Residential Code (2015 IRC) in its entirety and replace with Chapter 11 of the 2009 International Residential Code (2009 IRC) with amendments per Public Comment Form B-43 dated 8/5/15. Also during that meeting, it was stated that committee members had the option of modifying the amendments submitted and approved under Public Comment Form B-43 in the September 9th meeting.

As documented in Exhibits 1 and 2, the American Recovery and Reinvestment Act (2009 ARRA) requires in Section 410 (a)(2)(A): *A building energy code (or codes) for residential buildings that meets or exceeds the recently published International Energy Conservation Code (IECC), or achieves equivalent or greater energy savings.* Section 410 (a)(2)(A) was referring to the 2009 IECC which was in effect when the 2009 ARRA was signed into law.

For all practical purposes, the 2009 IRC Chapter 11 is equivalent to the 2009 International Energy Conservation Code (2009 IECC) Chapter 4- Residential Energy Efficiency as required in the 2009 ARRA.

Governor Henry, along with the governors of all other states, submitted a letter to the U.S. Department of Energy in 2009 assuring that Oklahoma will comply with 2009 ARRA Section 410 by 2017 in order to receive Federal funds. Unlike other chapters in the 2015 IRC, the Building Technical Sub-committee or other sub-committees cannot simply delete or amend sections in Chapter 11 that result in a less-stringent energy code requirement than in the original (2009 IECC) document. In other words, the 2009 IRC Chapter 11 is directly linked to the 2009 IECC by virtue of the 2009 ARRA Section 410 mandatory requirements.

In public comment form B-43, section N1102.4.2.2 was amended to read as follows (B-43 changes are underlined):

N1102.4.2.2 Visual inspection option. The items listed in Table N1102.4.2, applicable to the method of construction, are field verified. Where required by the code official, an *approved party* independent from the installer of the insulation, or contractor shall inspect the air barrier and insulation. Where no *approved party* inspects these items the air barrier components shall be viewed as a part of the frame inspection or insulation inspection by the Authority having Jurisdiction.

The language of this section is ambiguous as the intent of the change is not clear. One interpretation is the contractor (builder or remodeler) is permitted to inspect the quality of the insulation installation. Another interpretation is that the "*approved party*" is independent from the installer or contractor. Moreover, the last sentence states that the insulation inspection may be considered part of the frame inspection even though the insulation is not present in the house at the time of the frame inspection. Typically, an "energy seal" or air-barrier inspection is conducted during the frame inspection to look for breaches in the building envelope prior to placement of insulation. The net effect of these amendments clouds the meaning of an independent inspection of the completed insulation in the building envelope. If this is the case, the revised version (B-43)

Section N1102.4.2.2 fails the 2009 ARRA Section 410 “meets or exceeds” clause as written. This deficiency can have long-term implications on the house comfort level and energy consumption.

During the previous Building Subcommittee meeting, several members agreed that the most important aspect of building an energy efficient house is to seal and insulate the building envelope correctly. In 2009 IRC Section N1102.4.2.2- Visual Inspection option, the Residential Data Collection Checklist (Exhibit 3) is proposed as the most straight-forward and effective way to insure compliance with the 2009 IECC. This Checklist was pulled directly from the 2009 IECC Appendix and has the following advantages:

1. Unlike section N1102.4.2 and Table N1102.4.2 (page 472) in the 2009 IRC, the checklist format is easier to implement in the field. Few builders and insulation workers own a copy of the IRC- any version. It also provides a document for future reference.
2. As illustrated in Exhibit 4, the checklist has a companion Checklist Examples (pdf file) that shows how to properly insulate a house. This tool is invaluable and will assist insulation workers, builders and inspectors in reaching the same goal.
3. Insures that all insulation inspections meet the same criteria.
4. Complies with the “meets or exceed” clause in the 2009 ARRA Section 410 as it originates from the 2009 IECC.

In summary, the current version (B-43 public comment form) as approved by the Building Technical Subcommittee on August 12th may not meet the 2009 ARRA Section 410 “meet or exceed” clause. Moreover, committee members did not have adequate time to research the discrepancies between the mandatory requirements of 2009 ARRA Section 410 and the B-43 public comment form as presented and did not understand the implications.

This proposal rolls-back the previously approved B-43 amendments to the 2009 IRC Section N1102.4.2.2 in order to comply with 2009 ARRA Section 410 mandatory requirements. The wording has been changed to improve clarity and the qualifications of the third party inspectors have been defined. The Residential Data Collection Checklist is proposed to clarify the visual inspection requirements and facilitate implementation of the 2009 IRC Section N1102.4.2.2 in the field.

While this public comment form focuses on Section N1102.4.2.2- visual inspection option, several other amendments presented in B-43 do not comply with the 2009 ARRA Section 410 “meet or exceed” clause. The 2011 IRC chapter 11 should not be amended for other than firm technical reasons. These amendments may be problematic since the unintended consequences of non-complying with the 2009 ARRA are unknown. More importantly, Oklahoma home owners deserve to have housing stock that minimizes long-term energy consumption and cost of ownership.

List of Exhibits:

Exhibit 1: 2009 American Recovery and Reinvestment Act (2009 ARRA) Summary

Exhibit 2: 2009 American Recovery and Reinvestment Act Section 410 Language

Exhibit 3: Residential Data Collection Checklist

Exhibit 4: Residential Data Collection Checklist Examples

Exhibit 1:

Explanatory Statement on Section 410, Recovery Act (HR1) by National Building Community Stakeholders (November 18, 2009)

Since the passage of the American Recovery and Reinvestment Act (ARRA) in February, 2009, State Energy Program ("SEP") funding tied to building energy code adoption and enforcement has been the subject of much discussion and debate. The objective of this statement is to clarify the intention of the statute and to offer assistance to state and local governments to advance building energy efficiency codes, including code adoption, training in the operation of the codes and efforts at compliance and enforcement. We recognize that success in this area will not be easy but we have joined together to help. In an effort to provide accurate, understandable, and actionable information to states, local governments and the organizations and entities that support greater energy efficiency in the built environment, the undersigned groups offer the following information about Sec. 410, of ARRA.

The actual statutory provision is as follows:

Section 410 (a) (2)

The State, or the applicable units of local government that have authority to adopt building codes, will implement the following:

- (A) A building energy code (or codes) for residential buildings that meets or exceeds the most recently published International Energy Conservation Code, or achieves equivalent or greater energy savings.
- (B) A building energy code (or codes) for commercial buildings throughout the State that meets or exceeds the ANSI/ASHRAE/IESNA Standard 90.1-2007, or achieves equivalent or greater energy savings.
- (C) A plan for the jurisdiction achieving compliance with the building energy code or codes described in subparagraphs (A) and (B) within 8 years of the date of enactment of this Act in at least 90 percent of new and renovated residential and commercial building space. Such plan shall include active training and enforcement programs and measurement of the rate of compliance each year.

Some of the descriptions of this statutory language provided by third parties have resulted in inaccurate information and confusion among those who are involved in meeting the requirements of this Act.

The key points are as follows:

- 1- **Conditions for Acceptance of ARRA funding.** All 50 state governors have submitted letters to the Department of Energy, providing assurances that their states would comply with the terms of Section 410. All 50 states have accepted SEP funds that were conditioned on these assurances. Therefore, all 50 states have committed to do three things:

- a. Adopt a building energy code for residential buildings that meets or exceeds the 2009 IECC;¹
- b. Adopt a building energy code for commercial buildings that meets or exceeds the ANSI/ASHRAE/IESNA Standard 90.1-2007, and;
- c. Develop and implement a plan, including active training and enforcement provisions, to achieve 90% compliance with the target codes by 2017, including measuring current compliance each year.

- 2- **Achieving 90% Compliance in 8 Years Requires Prompt State Code Adoption.** While ARRA, out of respect for the variations in state and local adoption procedures, includes no specific date by which states must adopt compliant building energy codes, the legislation does specify that State plans for demonstrating 90% compliance with the codes should be designed to achieve that compliance level within 8 years from passage of ARRA, *i.e.*, 2017. In order to ensure compliance with the law, it is in a State's best interest to begin the process of adopting target codes (or better) as soon as possible. The measurement of compliance "each year" means states will need to begin assessing their rate of compliance with the target codes in February 2010.
- 3- **Code Adoption Integral to Compliance.** While there is not yet a published common means of measuring and reporting compliance with the target codes, we recommend assessing compliance with the existing codes. DOE is currently developing these common means. It is clear that unless a compliant building energy code addressing both residential and commercial buildings is adopted in the state, it will be extremely difficult to provide compliance statistics that are based on the target codes.
- 4- **A Long Way to Go.** As of this writing, only a few states have adopted codes that "meet or exceed" the target codes.
- 5- **Training & Enforcement Essential to State Compliance.** To achieve the required levels of compliance, training and enforcement must match the adopted state code or codes, so the process of adopting these codes in tandem with the development of such training and enforcement provisions is critical.
- 6- **Funding Available for Enforcement and Training.** Funding for enforcement and training can come from fees imposed for inspections, from grants (including SEP and the Energy Efficiency and Conservation Block Grant (EECBG)), from existing state and federal energy efficiency funds and from new funding supported by the groups who are working together to increase building code-related funding in the pending climate and energy bills.
- 7- **The First ARRA Compliance Deadline is Approaching.** The Department of Energy will begin requesting that states report their rate of compliance with the

¹ U.S. DOE has determined that the 2009 International Residential Code (IRC) does not meet the energy provisions of the 2009 International Energy Conservation Code (IECC).

target energy codes in the near future, and we expect DOE to require regular reporting in conjunction with ARRA compliance.

- 8- **Funding Opportunities For Jurisdictions** Congress is considering tying future funding for states to progress towards satisfaction of the assurances made in accepting ARRA funds.

The undersigned groups are committed to providing support to any requesting state and local government to achieve adoption of the target codes, to develop workable plans for training and enforcement, and to assist them in developing a plan to address the measurement and reporting of annual compliance with the target codes.

Supporting

Alliance to Save Energy

American Council for an Energy
Efficient Economy

The American Institute of Architects

American Society of Heating,
Refrigerating and Air-Conditioning
Engineers

Building Codes Assistance Project

Building Energy Efficient Codes
Network

International Code Council

National Association of State Energy
Officials

Natural Resources Defense Council

Northwest Energy Efficiency Alliance

Midwest Energy Efficiency Alliance

Southeast Energy Efficiency Alliance

Southwest Energy Efficiency Project

U.S. Green Building Council

H. R. 1

One Hundred Eleventh Congress
of the
United States of America

AT THE FIRST SESSION

*Begun and held at the City of Washington on Tuesday,
the sixth day of January, two thousand and nine*

An Act

Making supplemental appropriations for job preservation and creation, infrastructure investment, energy efficiency and science, assistance to the unemployed, and State and local fiscal stabilization, for the fiscal year ending September 30, 2009, and for other purposes.

*Be it enacted by the Senate and House of Representatives of
the United States of America in Congress assembled,*

SECTION 1. SHORT TITLE.

This Act may be cited as the "American Recovery and Reinvestment Act of 2009".

SEC. 2. TABLE OF CONTENTS.

The table of contents for this Act is as follows:

DIVISION A—APPROPRIATIONS PROVISIONS

TITLE I—AGRICULTURE, RURAL DEVELOPMENT, FOOD AND DRUG ADMINISTRATION, AND RELATED AGENCIES
TITLE II—COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES
TITLE III—DEPARTMENT OF DEFENSE
TITLE IV—ENERGY AND WATER DEVELOPMENT
TITLE V—FINANCIAL SERVICES AND GENERAL GOVERNMENT
TITLE VI—DEPARTMENT OF HOMELAND SECURITY
TITLE VII—INTERIOR, ENVIRONMENT, AND RELATED AGENCIES
TITLE VIII—DEPARTMENTS OF LABOR, HEALTH AND HUMAN SERVICES, AND EDUCATION, AND RELATED AGENCIES
TITLE IX—LEGISLATIVE BRANCH
TITLE X—MILITARY CONSTRUCTION AND VETERANS AFFAIRS AND RELATED AGENCIES
TITLE XI—STATE, FOREIGN OPERATIONS, AND RELATED PROGRAMS
TITLE XII—TRANSPORTATION, HOUSING AND URBAN DEVELOPMENT, AND RELATED AGENCIES
TITLE XIII—HEALTH INFORMATION TECHNOLOGY
TITLE XIV—STATE FISCAL STABILIZATION FUND
TITLE XV—ACCOUNTABILITY AND TRANSPARENCY
TITLE XVI—GENERAL PROVISIONS—THIS ACT

DIVISION B—TAX, UNEMPLOYMENT, HEALTH, STATE FISCAL RELIEF, AND OTHER PROVISIONS

TITLE I—TAX PROVISIONS
TITLE II—ASSISTANCE FOR UNEMPLOYED WORKERS AND STRUGGLING FAMILIES
TITLE III—PREMIUM ASSISTANCE FOR COBRA BENEFITS
TITLE IV—MEDICARE AND MEDICAID HEALTH INFORMATION TECHNOLOGY; MISCELLANEOUS MEDICARE PROVISIONS
TITLE V—STATE FISCAL RELIEF
TITLE VI—BROADBAND TECHNOLOGY OPPORTUNITIES PROGRAM
TITLE VII—LIMITS ON EXECUTIVE COMPENSATION

SEC. 3. PURPOSES AND PRINCIPLES.

(a) STATEMENT OF PURPOSES.—The purposes of this Act include the following:

ARRA 2009 →

←

(b) ASSISTANCE LEVEL PER DWELLING UNIT.—Section 415(c)(1) of the Energy Conservation and Production Act (42 U.S.C. 6865(c)(1)) is amended by striking “\$2,500” and inserting “\$6,500”.

(c) EFFECTIVE USE OF FUNDS.—In providing funds made available by this Act for the Weatherization Assistance Program, the Secretary may encourage States to give priority to using such funds for the most cost-effective efficiency activities, which may include insulation of attics, if, in the Secretary’s view, such use of funds would increase the effectiveness of the program.

(d) TRAINING AND TECHNICAL ASSISTANCE.—Section 416 of the Energy Conservation and Production Act (42 U.S.C. 6866) is amended by striking “10 percent” and inserting “up to 20 percent”.

(e) ASSISTANCE FOR PREVIOUSLY WEATHERIZED DWELLING UNITS.—Section 415(c)(2) of the Energy Conservation and Production Act (42 U.S.C. 6865(c)(2)) is amended by striking “September 30, 1979” and inserting “September 30, 1994”.

SEC. 408. TECHNICAL CORRECTIONS TO PUBLIC UTILITY REGULATORY POLICIES ACT OF 1978. (a) Section 111(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)) is amended by redesignating paragraph (16) relating to consideration of smart grid investments (added by section 1307(a) of Public Law 110-140) as paragraph (18) and by redesignating paragraph (17) relating to smart grid information (added by section 1308(a) of Public Law 110-140) as paragraph (19).

(b) Subsections (b) and (d) of section 112 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622) are each amended by striking “(17) through (18)” in each place it appears and inserting “(16) through (19)”.

SEC. 409. RENEWABLE ELECTRICITY TRANSMISSION STUDY. In completing the 2009 National Electric Transmission Congestion Study, the Secretary of Energy shall include—

- (1) an analysis of the significant potential sources of renewable energy that are constrained in accessing appropriate market areas by lack of adequate transmission capacity;
- (2) an analysis of the reasons for failure to develop the adequate transmission capacity;
- (3) recommendations for achieving adequate transmission capacity;
- (4) an analysis of the extent to which legal challenges filed at the State and Federal level are delaying the construction of transmission necessary to access renewable energy; and
- (5) an explanation of assumptions and projections made in the Study, including—

- (A) assumptions and projections relating to energy efficiency improvements in each load center;
- (B) assumptions and projections regarding the location and type of projected new generation capacity; and
- (C) assumptions and projections regarding projected deployment of distributed generation infrastructure.

SEC. 410. ADDITIONAL STATE ENERGY GRANTS. (a) IN GENERAL.—Amounts appropriated under the heading “Department of Energy—Energy Programs—Energy Efficiency and Renewable Energy” in this title shall be available to the Secretary of Energy for making additional grants under part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.). The Secretary shall make grants under this section in excess of the base allocation established for a State under regulations issued pursuant to the

ARRA 2009 page 32

SEC. 410
START
→

authorization provided in section 365(f) of such Act only if the governor of the recipient State notifies the Secretary of Energy in writing that the governor has obtained necessary assurances that each of the following will occur:

(1) The applicable State regulatory authority will seek to implement, in appropriate proceedings for each electric and gas utility, with respect to which the State regulatory authority has ratemaking authority, a general policy that ensures that utility financial incentives are aligned with helping their customers use energy more efficiently and that provide timely cost recovery and a timely earnings opportunity for utilities associated with cost-effective measurable and verifiable efficiency savings, in a way that sustains or enhances utility customers' incentives to use energy more efficiently.

(2) The State, or the applicable units of local government that have authority to adopt building codes, will implement the following:

(A) A building energy code (or codes) for residential buildings that meets or exceeds the most recently published International Energy Conservation Code, or achieves equivalent or greater energy savings.

(B) A building energy code (or codes) for commercial buildings throughout the State that meets or exceeds the ANSI/ASHRAE/IESNA Standard 90.1-2007, or achieves equivalent or greater energy savings.

(C) A plan for the jurisdiction achieving compliance with the building energy code or codes described in subparagraphs (A) and (B) within 8 years of the date of enactment of this Act in at least 90 percent of new and renovated residential and commercial building space. Such plan shall include active training and enforcement programs and measurement of the rate of compliance each year.

(3) The State will to the extent practicable prioritize the grants toward funding energy efficiency and renewable energy programs, including—

(A) the expansion of existing energy efficiency programs approved by the State or the appropriate regulatory authority, including energy efficiency retrofits of buildings and industrial facilities, that are funded—

(i) by the State; or

(ii) through rates under the oversight of the applicable regulatory authority, to the extent applicable;

(B) the expansion of existing programs, approved by the State or the appropriate regulatory authority, to support renewable energy projects and deployment activities, including programs operated by entities which have the authority and capability to manage and distribute grants, loans, performance incentives, and other forms of financial assistance; and

(C) cooperation and joint activities between States to advance more efficient and effective use of this funding to support the priorities described in this paragraph.

(b) STATE MATCH.—The State cost share requirement under the item relating to "Department of Energy; Energy Conservation" in title II of the Department of the Interior and Related Agencies

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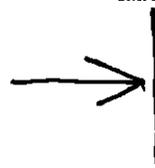


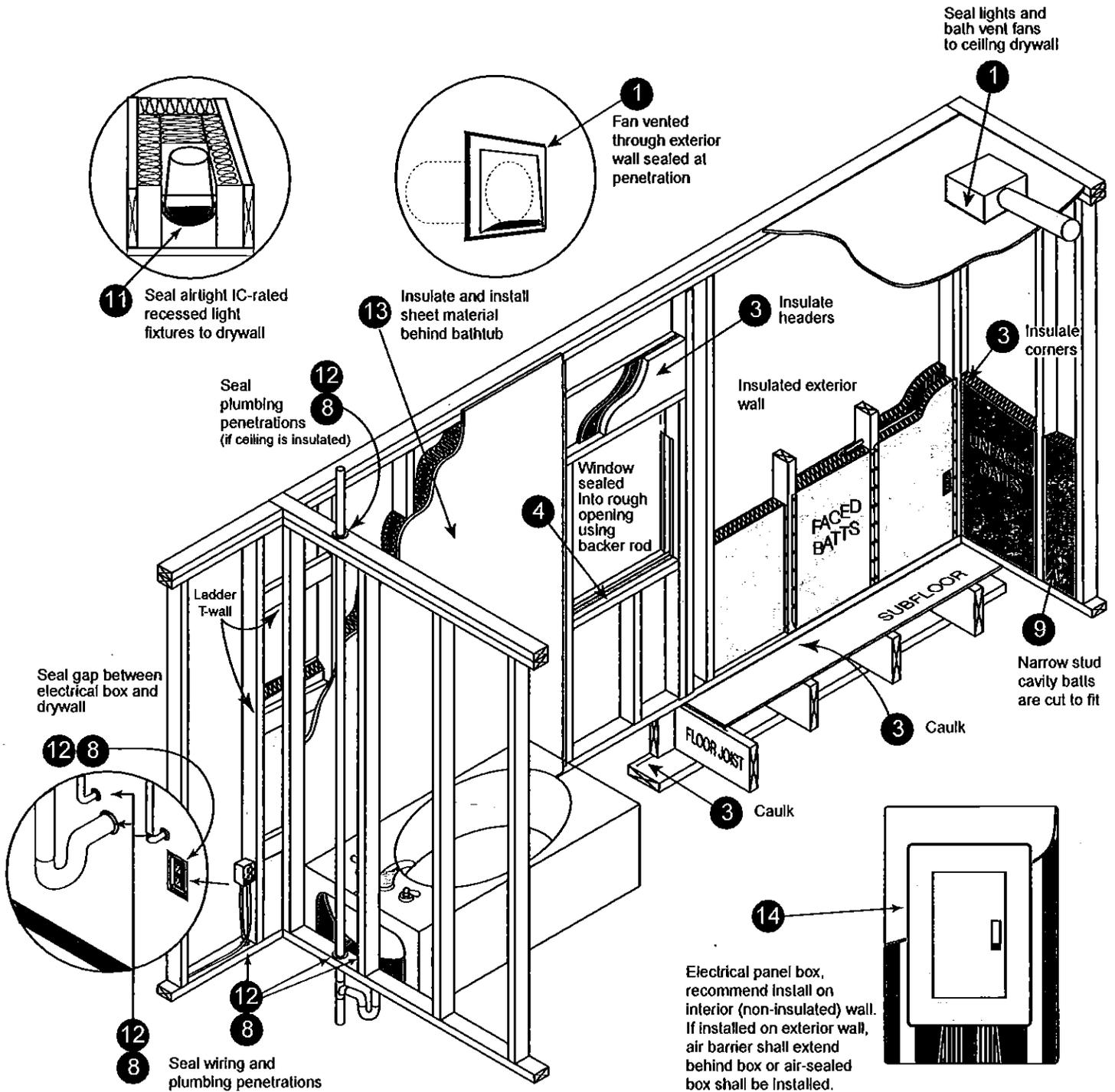
Table 402.4.2

Residential Data Collection Checklist Examples

NUMBER	COMPONENT	CRITERIA
1	Air barrier and thermal barrier	Exterior thermal envelope insulation for framed walls is installed in substantial contact and continuous alignment with building envelope air barrier. Breaks or joints in the air barrier are filled or repaired. Air-permeable insulation is not used as a sealing material. Air-permeable insulation is inside of an air barrier.
2	Ceiling/attic	Air barrier in any dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed. Attic access (except unvented attic), knee wall door, or drop down stair is sealed.
3	Walls	Corners and headers are insulated. Junction of foundation and sill plate is sealed.
4	Windows and doors	Space between window/door jambs and framing is sealed.
5	Rim joists	Rim joists are insulated and include an air barrier.
6	Floors (including above-garage and cantilevered floors)	Insulation is installed to maintain permanent contact with underside of subfloor decking. Air barrier is installed at any exposed edge of insulation.
7	Crawl space walls	Insulation is permanently attached to walls. Exposed earth in unvented crawl spaces is covered with Class I vapor retarder with overlapping joints taped.
8	Shafts, penetrations	Duct shafts, utility penetrations, knee walls and flue shafts opening to exterior or unconditioned space are sealed.
9	Narrow cavities	Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blown insulation.
10	Garage separation	Air sealing is provided between the garage and conditioned spaces.
11	Recessed lighting	Recessed light fixtures are air tight, IC rated, and sealed to drywall. Exception—fixtures in conditioned space.
12	Plumbing and wiring	Insulation is placed between outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.
13	Shower/tub on exterior wall	Showers and tubs on exterior walls have insulation and an air barrier separating them from the exterior wall.
14	Electrical/phone box on exterior walls	Air barrier extends behind boxes or air sealed-type boxes are installed.
15	Common wall	Air barrier is installed in common wall between dwelling units.
16	HVAC register boots	HVAC register boots that penetrate building envelope are sealed to subfloor or drywall.
17	Fireplace	Fireplace walls include an air barrier.

Disclaimer:
This document is intended solely to help graphically demonstrate the air leakage provisions of section 402.4 of the 2009 IECC. It does not cover all airsealing locations or techniques. Other code provisions may be applicable as well.

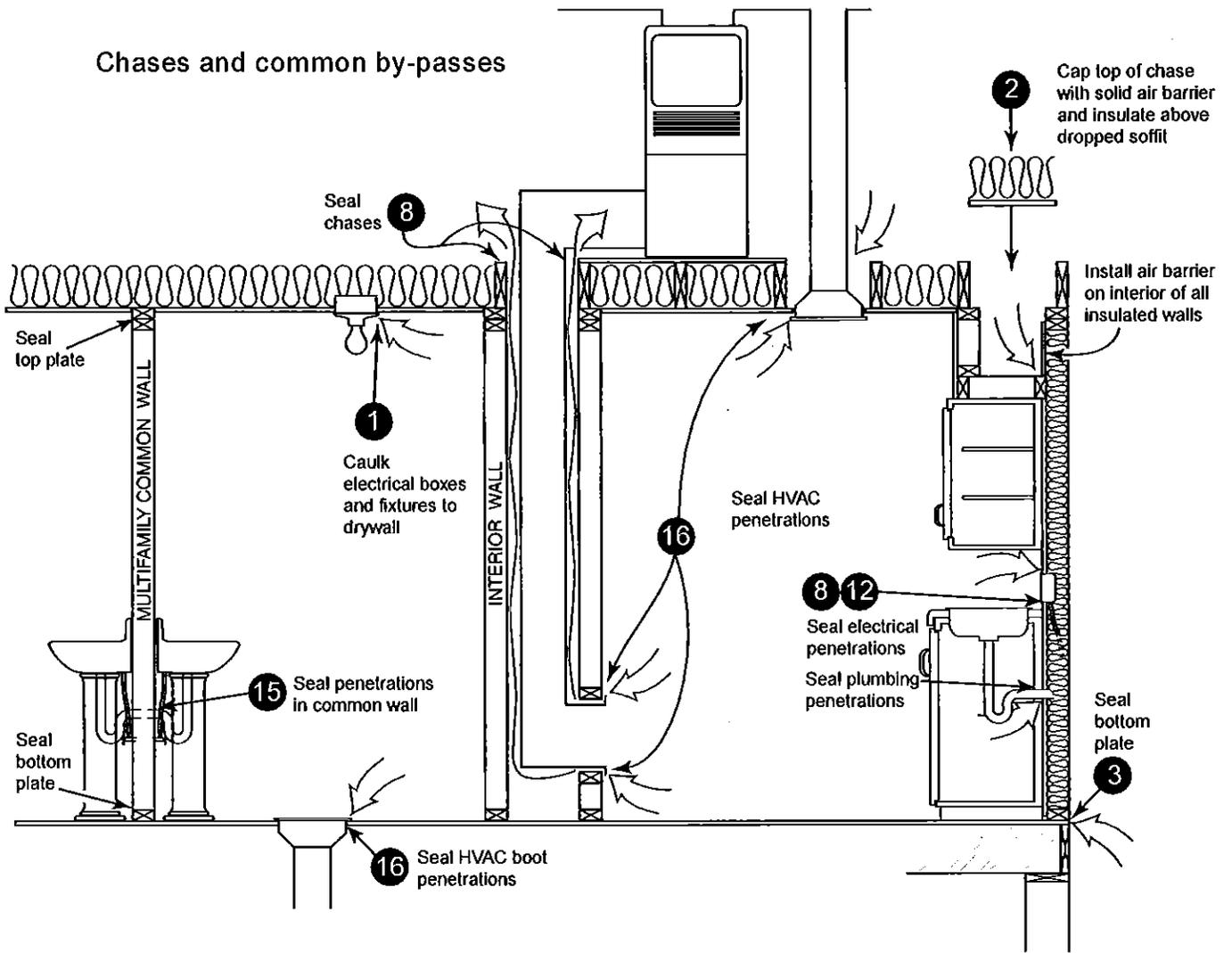
Air sealing key points



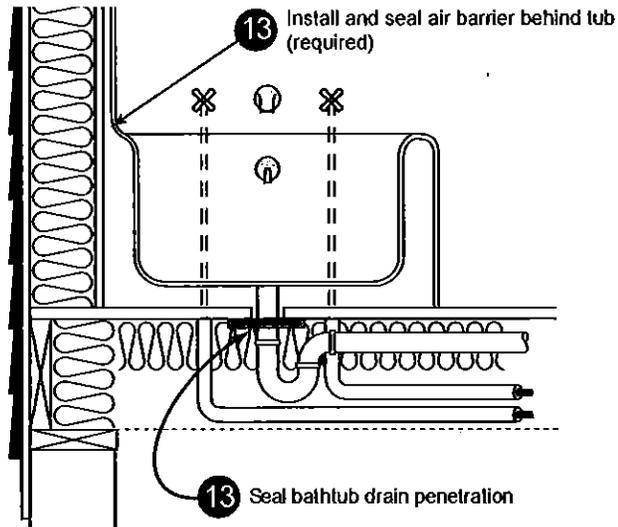
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Air sealing key points continued

Chases and common by-passes

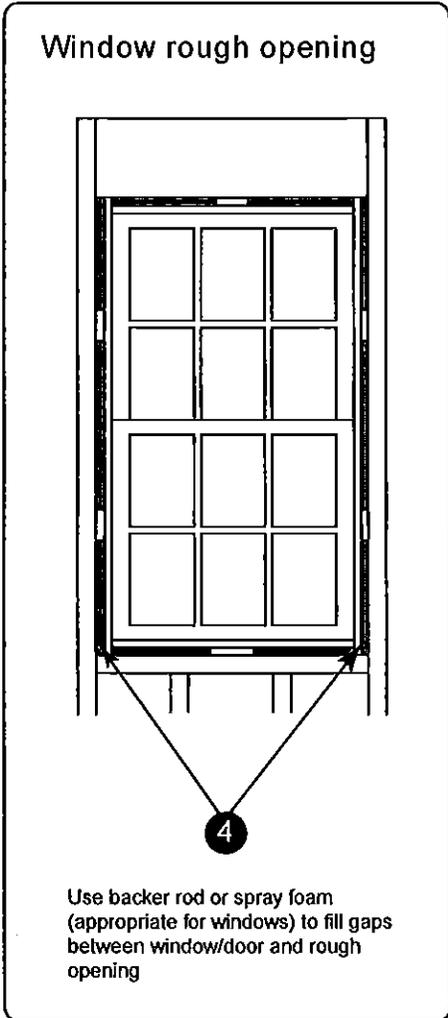


Shower/tub drain rough opening

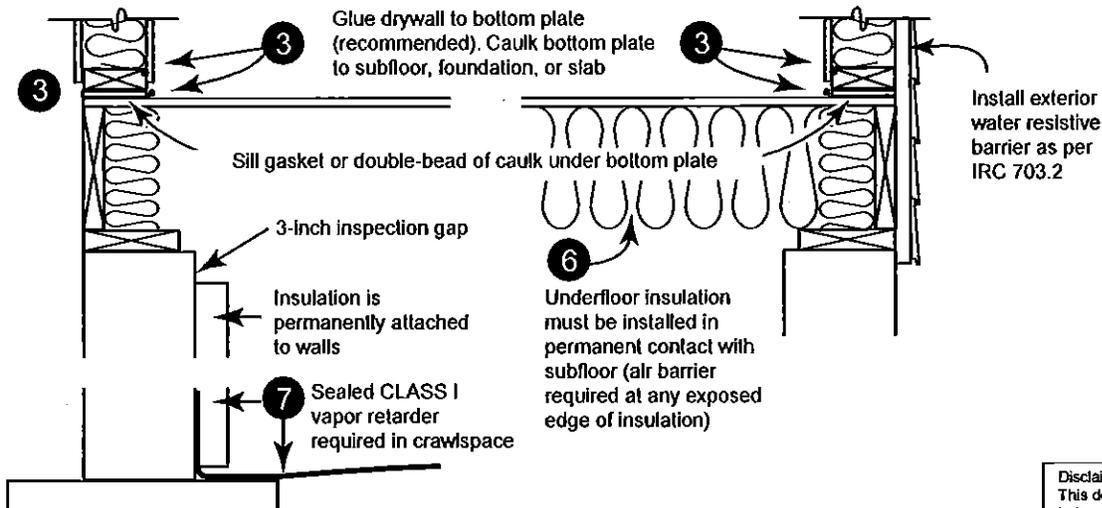
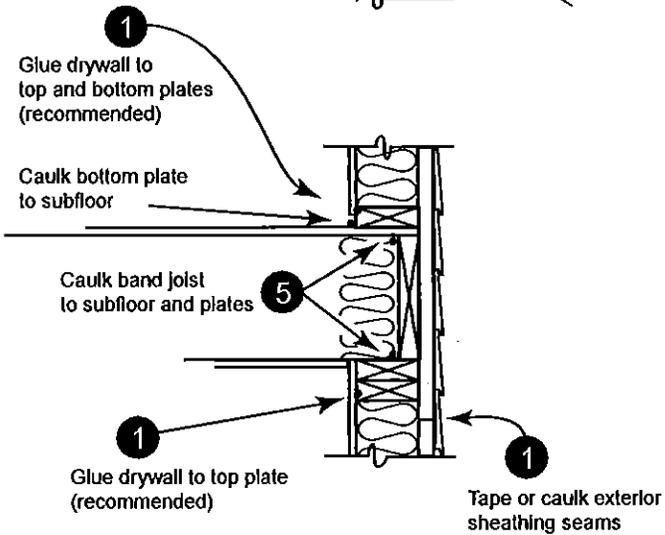
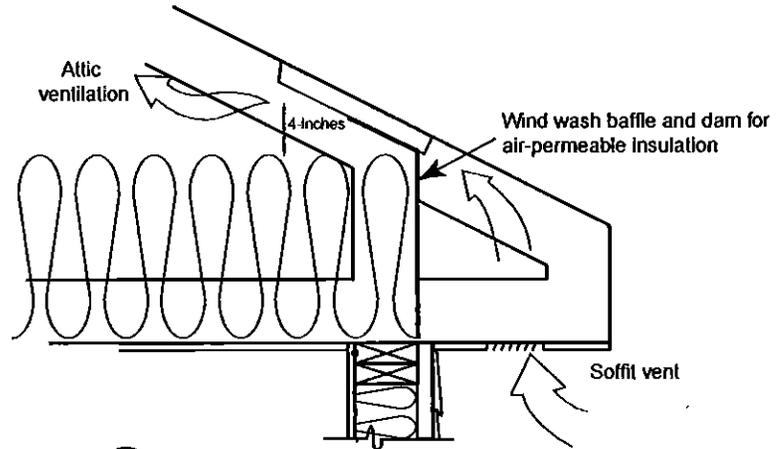


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Air sealing key points continued



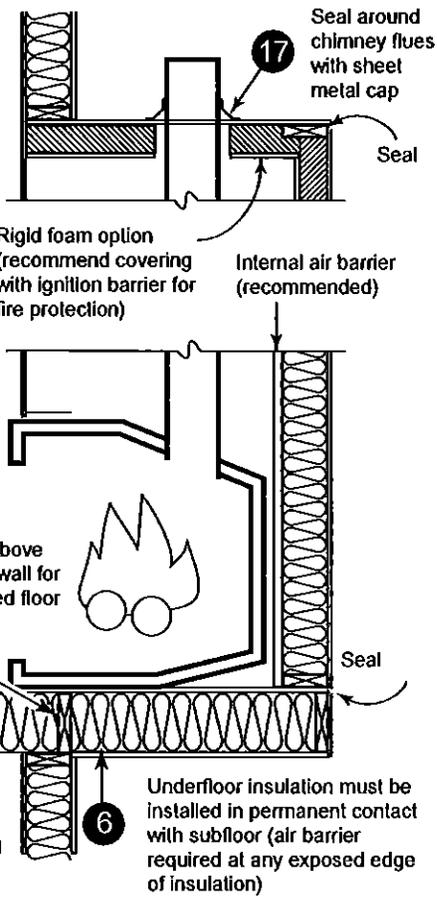
Wall cross-section



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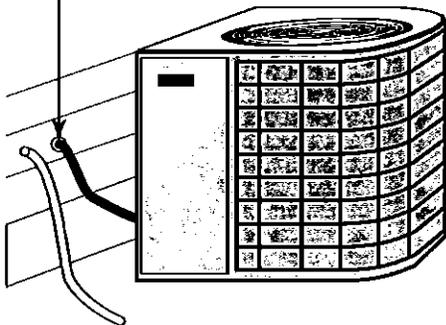
Air sealing key points continued

Combustion chase penetrations



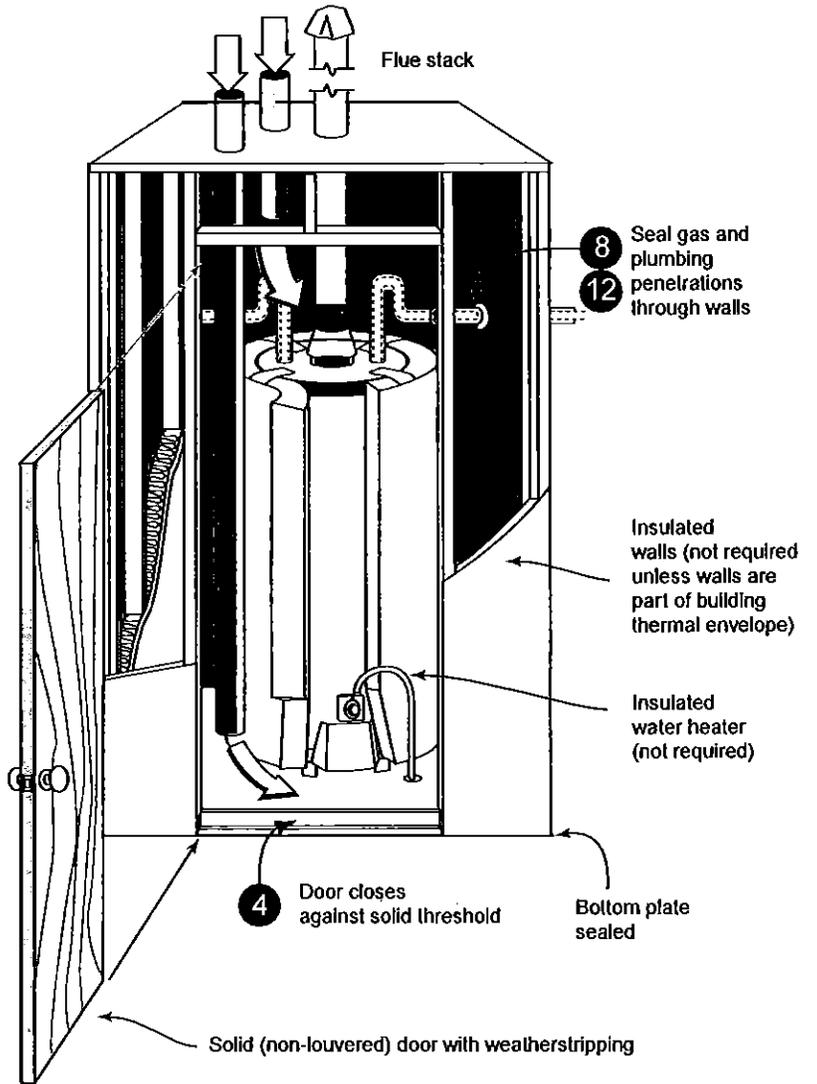
Exterior penetrations

8 12 Caulk exterior wall penetrations for refrigeration lines, condensate line, etc.



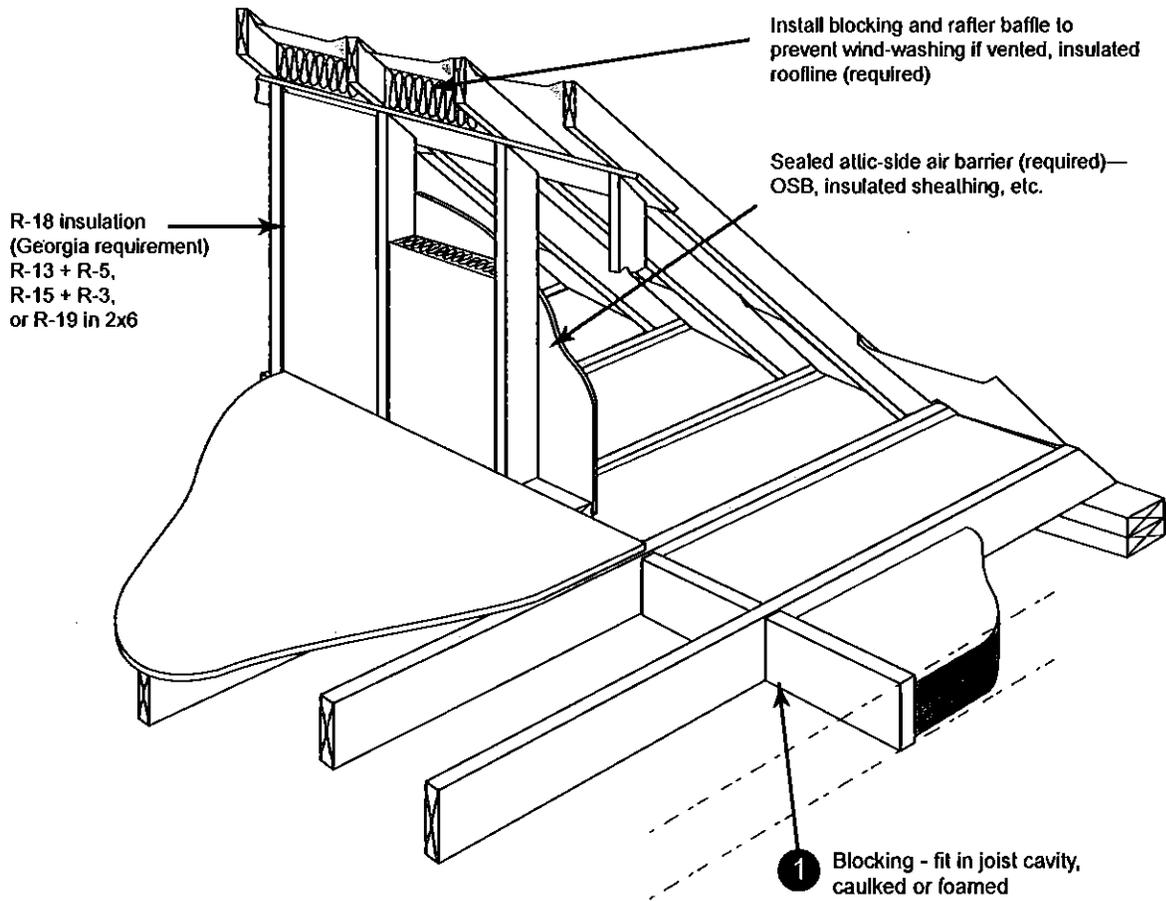
Combustion closet

Combustion air inlets
as per mechanical and/or fuel gas code

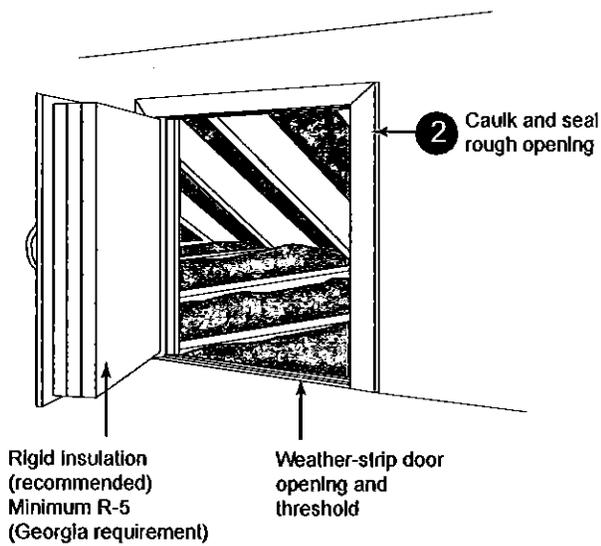


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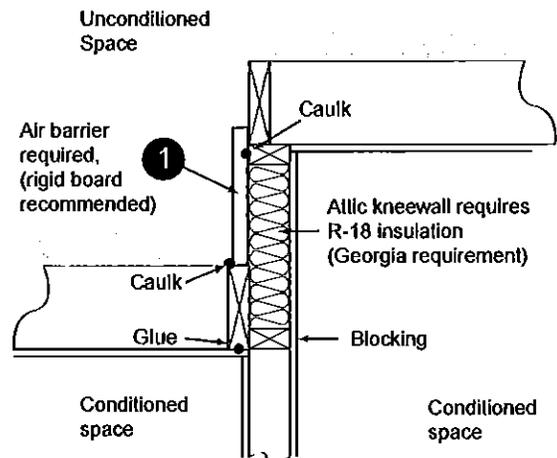
Air sealing key points continued



Attic knee-walls



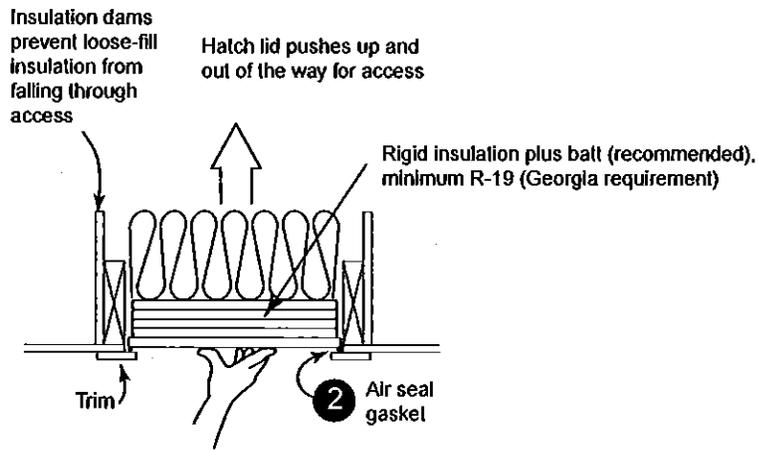
Two-level attic



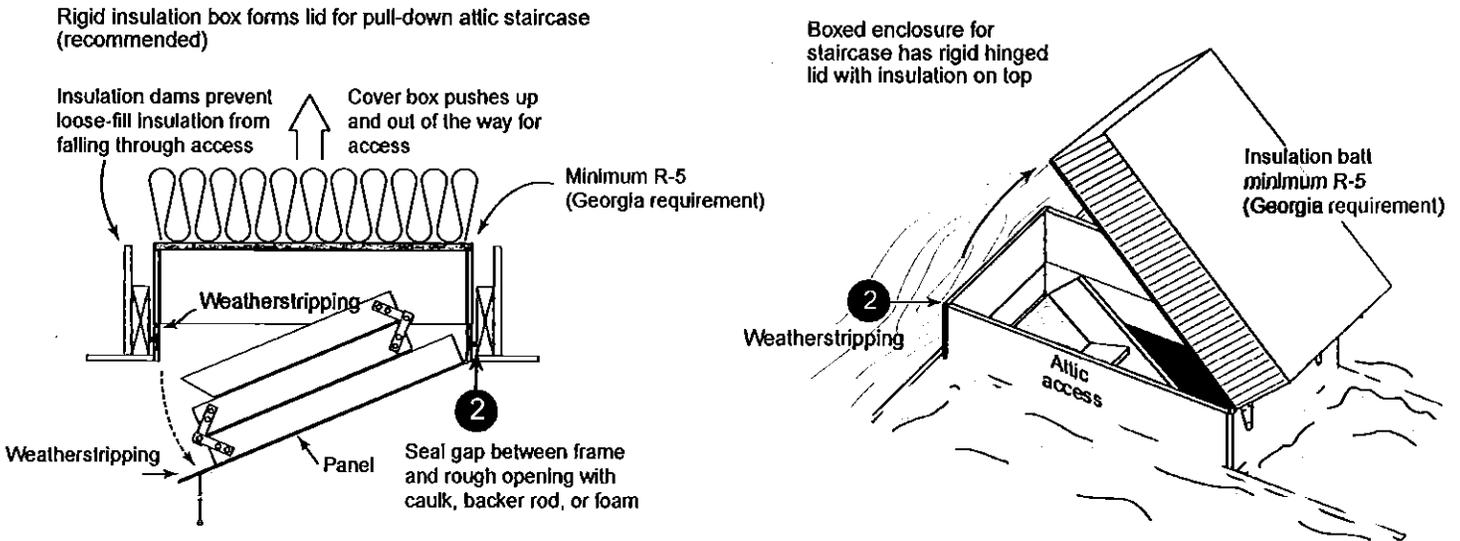
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Air sealing key points continued

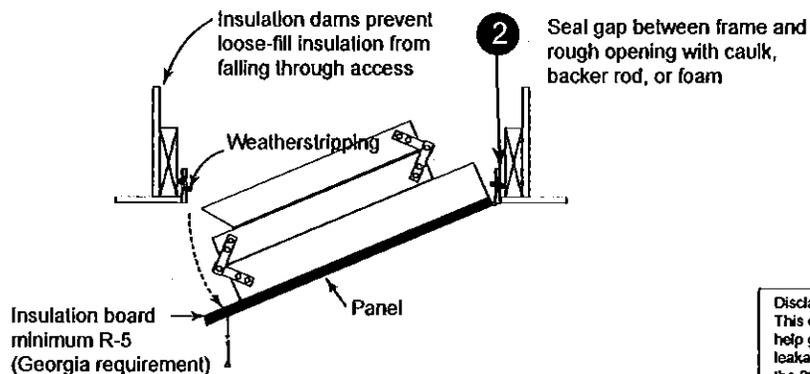
Attic scuttle



Attic pull-down stairs

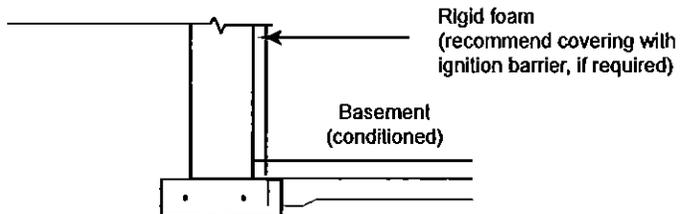
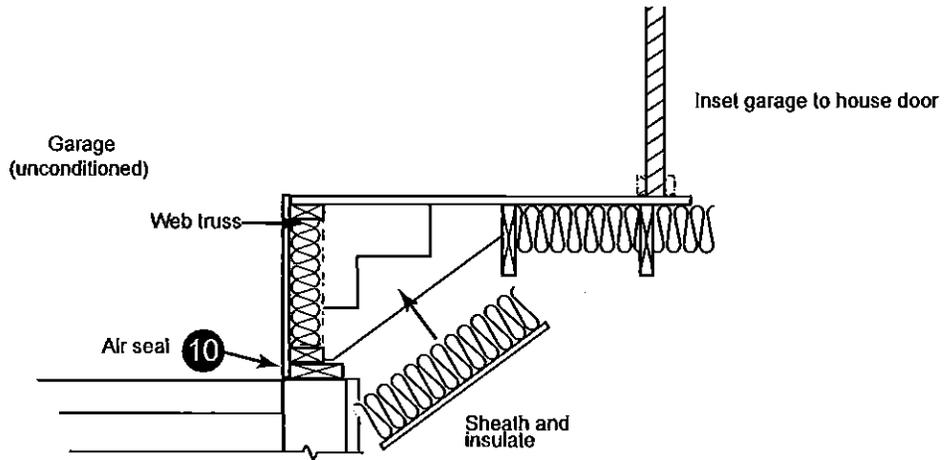
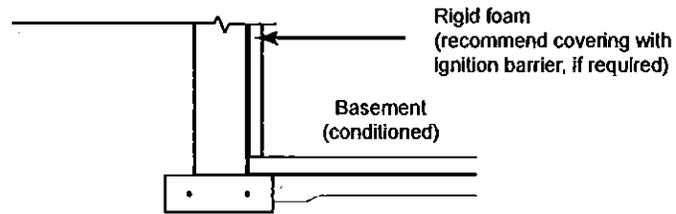
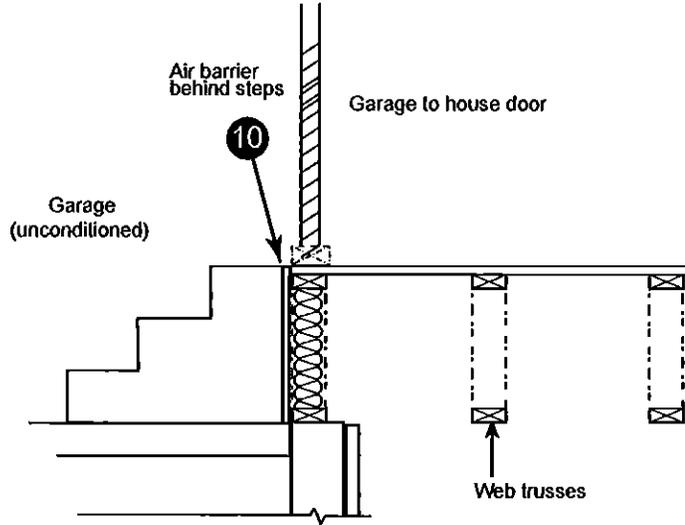


Attic pull-down stairs



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Air sealing key points *continued*

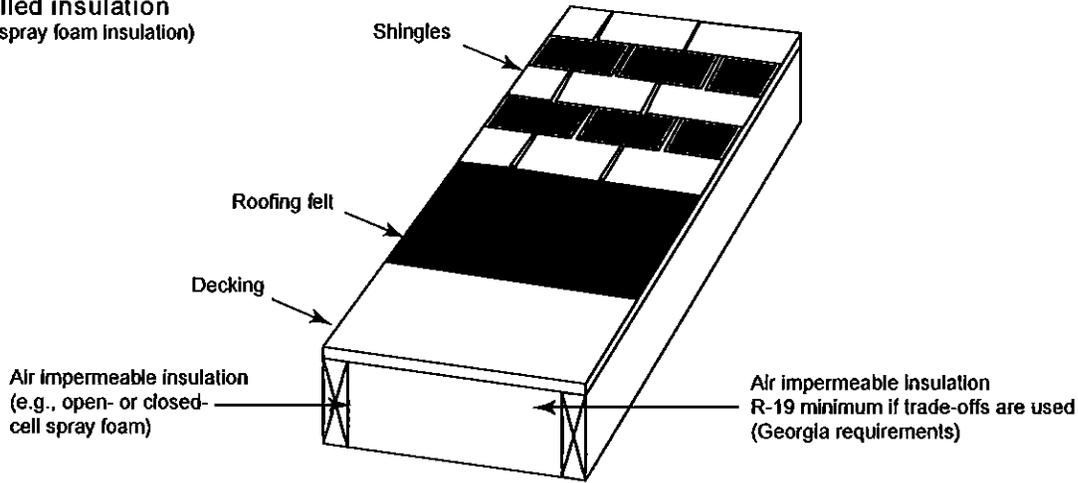


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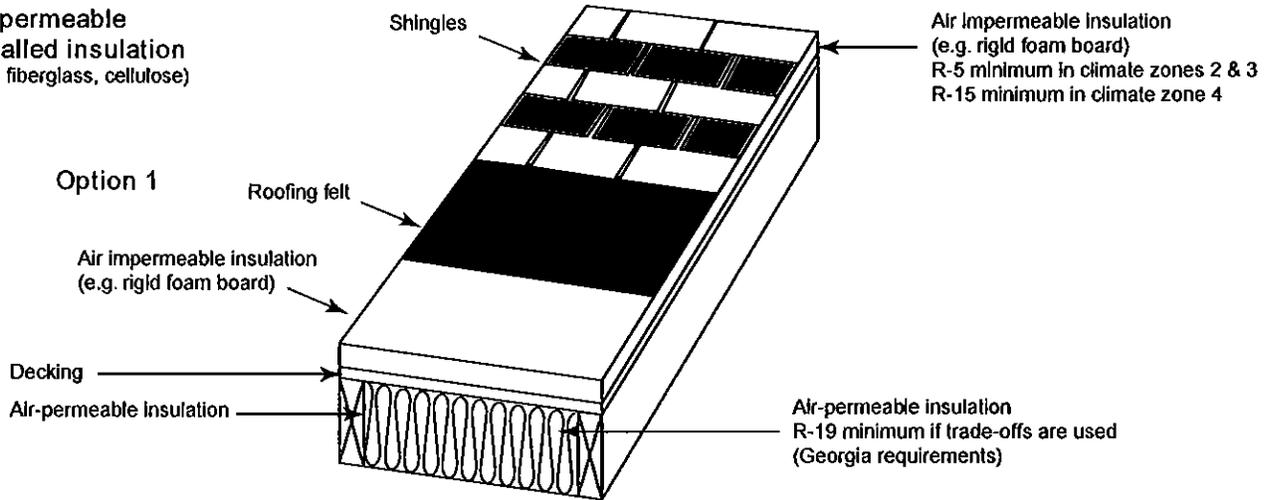
Roofline Installed Insulation Options

Reference Table 402.6 in Georgia amendments to the 2009 IECC and section 806.4 in the Georgia amendments to the 2006 IECC

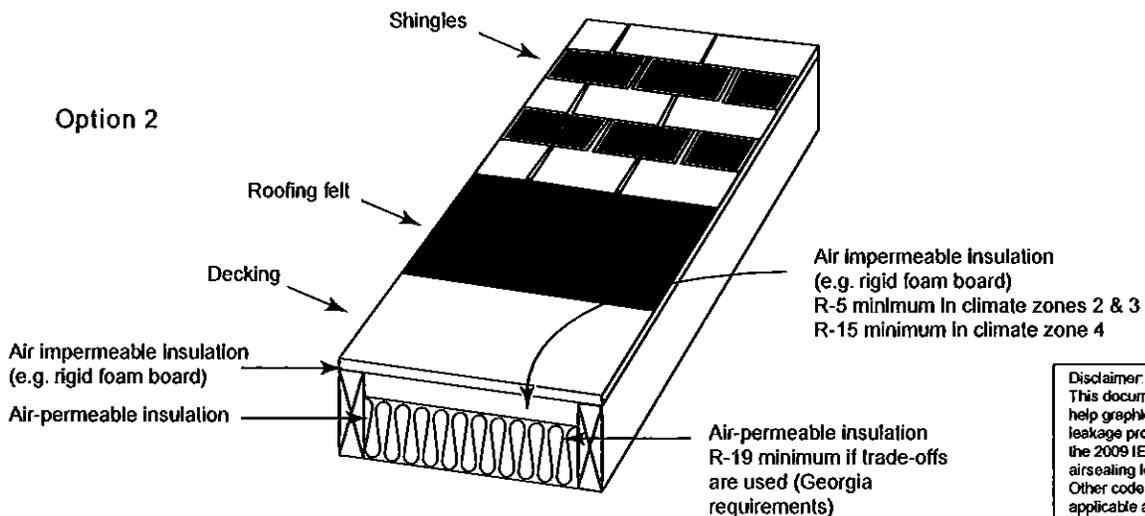
Air impermeable installed insulation
(e.g., spray foam insulation)



Air-permeable installed insulation
(e.g., fiberglass, cellulose)



Option 2



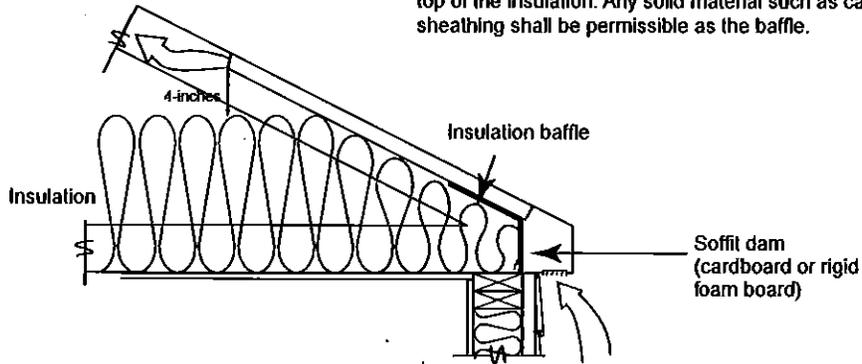
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Ceiling Insulation Details

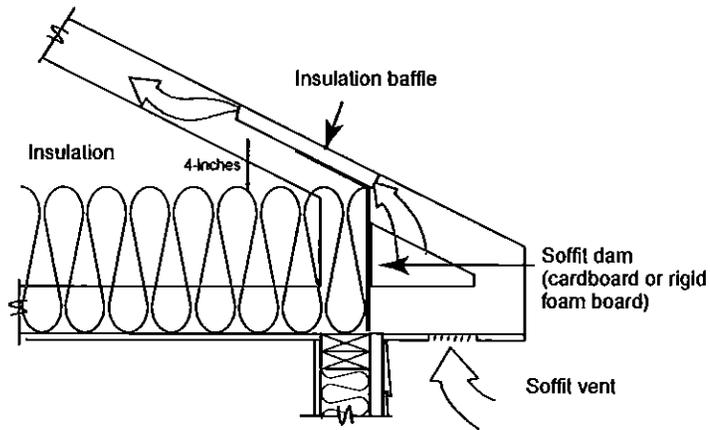
Rafter and Truss

Note: Wind wash baffle and air-permeable insulation dam. For air permeable insulation in vented attics, baffles shall be installed adjacent to soffit and eave vents. A minimum of a 1-inch of space shall be provided between the insulation and the roof sheathing and at the location of the vent. The baffle shall extend over the top of the insulation inward until it is at least 4 inches vertically above the top of the insulation. Any solid material such as cardboard or thin insulating sheathing shall be permissible as the baffle.

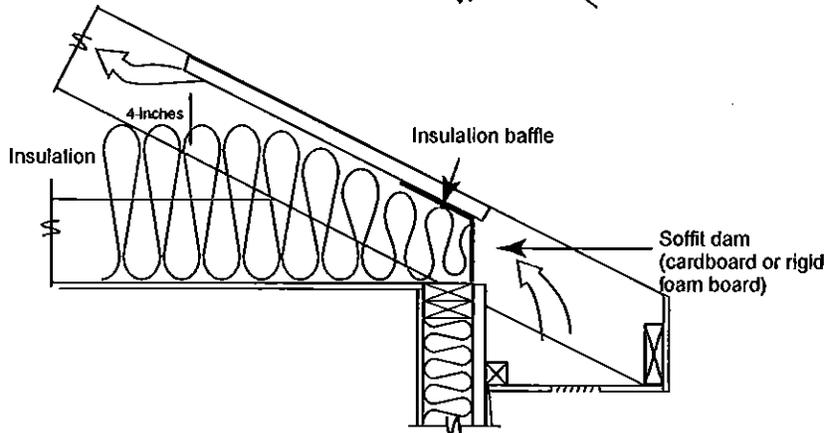
Standard Truss with tapered insulation depth



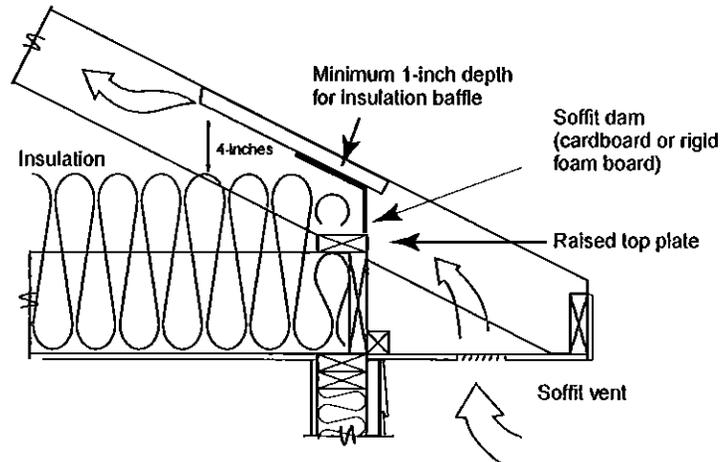
Energy Truss with full height insulation (recommended)



Standard rafter and top plate with tapered insulation depth



Rafter on raised top plate with full height insulation (recommended)



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