

Code Notes

A meeting with the building department before construction is well-advised. Should your code official need information in support of the new techniques you may use in an energy-efficient home, this appendix contains Web sites and a sample document that may be helpful. A set of draft code notes are available on DOE's Building Energy Codes Resource Center. These draft documents are written for codes officials, and provide a description of energy efficiency techniques, citations to relevant codes, and guidance for plan reviews and field inspections. The sample is the last one on the list below and is entitled *Rigid Board Insulation Installed as Draft Stop in Attic Kneewall – Code Notes (Draft)*. Here is a list of available code notes that should help assure your local code official that the proposed techniques are both safe and in compliance with the model codes. The code notes are available at www.energycodes.gov/support/code_notes.stm.

- Single Top Plate
- No Headers in Nonbearing Walls
- Header Hangers in Bearing Walls
- Framing Floor Joists Spaced at 24 inches on Center
- Framing Studs Spaced at 24 inches on Center
- Open Spaces as Return-Air Options
- Details for Mechanically Vented Crawl Spaces
- Ventilation Requirements for Condensing Clothes Dryers
- Drywall Clips
- Rigid Board Insulation Installed as Draft Stop in Attic Kneewall



Rigid Board Insulation Installed as Draft Stop in Attic Kneewall - Code Notes (DRAFT)



Framing kneewall

Rigid board insulation (foam plastic) is an effective draft stop and also increases the R-value of the attic kneewall if installed on the attic side of the kneewall, replacing the need for separate draft stop and insulation products. The IRC requires foam plastic insulation to be protected against ignition by using fiberglass batt insulation, gypsum board or other products that meet the flame and smoke density requirements. Foam plastic products rated for flame and smoke density can be installed without such a protective covering.

Insulating attic kneewalls between a conditioned space with vaulted ceilings and the attic is important to reduce energy loss through the wall, especially in the summer months. To be effective, the insulation installed in the kneewalls must be supported so that it stays in contact with the gypsum board, and protected against air moving through the insulation.



photo by Britt-Makela Group

Kneewall sheathing insulation to increase R-value to equal the outside wall.

Foam plastic insulation can be installed on the attic side of the attic kneewall (see Figure) to both act as a draft stop between the conditioned house and the unconditioned attic and to increase the insulation R-value of the attic kneewall. Installing such an insulating backing in the kneewall supports the fiberglass batt insulation between framing members, replaces an air barrier, and adds insulating value to the attic kneewall.

Plan Review

1. Verify that plastic insulation called out on the construction detail meets the ASTM E 84 requirements for flame spread and smoke development. Require manufacturer literature or an ICC Evaluation Service report.
2. Verify that the insulation R-value of the foam plastic insulation called out on the building plans meets or exceeds the R-value requirements called for on the energy code compliance documentation (only if credit has been taken for the foam plastic insulation).

Field Inspection

1. Verify that the foam plastic insulation installed in the field is consistent with that called out on the building plans.
2. Verify that the insulation R-value specified on the insulation meets or exceeds the R value called out on the plans or documentation.
3. Verify that that sealant has been installed around the edges of the insulation and that any holes or penetrations in the foam plastic insulation are sealed.

Code Citations

**IRC 2000, Section R318.2.3 and IRC 2003, Section R314.2.3**

Within attics and crawlspaces, where entry is made only for service of utilities, foam plastics shall be protected against ignition by 1 1/2-inch-thick (38 mm) mineral fiber insulation, 1/4-inch-thick (6.4 mm) wood structural panels, 3/8-inch (9.5 mm) particleboard, 1/4-inch (6.4 mm) hardboard, 3/8-inch (9.5 mm) gypsum board, or corrosion resistant steel having a base metal thickness of 0.016 inch (0.406 mm).

IRC 2000, Section R318.3

Plastic foam not meeting the requirements of Section R318.1 and R318.2 may be specifically approved on the basis of one of the following approved tests: ASTM E 84, FM 4880, UL 1040, ASTM E152, or UL 1715, or fire tests related to actual end-use configurations. The specific approval may be based on the end use, quantity, location and similar considerations where such tests would not be applicable or practical.

IRC 2003, Section R314.3

Plastic foam not meeting the requirements of Section R318.1 and R318.2 may be specifically approved on the basis of one of the following approved tests: ASTM E 84, FM 4880, UL 1040, NFPA 286, ASTM E152, or UL 1715, or fire tests related to actual end-use configurations. The specific approval may be based on the end use, quantity, location and similar considerations where such tests would not be applicable or practical.