CITY OF PALO ALTO

DEVELOPMENT SERVICES – BUILDING INSPECTION

INSPECTION GUIDELINES: INSULATION

INSPECTION CODE: 235

SCOPE: RESIDENTIAL

APPLICABLE CODES: 2016 CBC, CRC, CPC, CMC, CEC, CALGreen, CEnC, and PAMC

The information provided in this document is general and intended as a guide only. Each project is unique and additional requirements may be enforced as deemed appropriate.

IMPORTANT

☐ Certification of insulation from installers is not acceptable insulation inspection—no exceptions.

☐ Failure to complete items below, prior to inspection, may result in a re-inspection fee.

ALTERNATE MATERIALS

☐ Alternate methods and materials (e.g., blown-in, loose-fill, and spray foam insulation) shall be submitted, reviewed, and approved by the City of Palo Alto prior to installation via an application for Alternate Materials or Methods Request (AMMR).

PRE-INSPECTION

☐ Verify all required sequential inspections and correction notices are complete.

☐ Double sided shear walls (Inspection 236) should be inspected at this time.

☐ Verify that concealed insulating materials have a flame spread index of not more than 25 and a smoke-developed index of not more than 450. (CRC R302.10.1)

☐ Paper faced insulation is not permitted in attics, the open side of furred spaces, and ventilated interstitial spaces due to the potential of embers igniting the paper. Quilted foil-backed or un-faced fiberglass batts and blankets are better suited to conditions of potential fire hazards. Use approved quilted foil-backed insulation such as “Reflectix Insulation” in areas where a vapor barrier is required and use as a fix when paper back insulation is exposed.

INSPECTION

GENERAL/WALLS

☐ Verify the insulation requirements (e.g., R-value) on the T-24 page of the approved plans. (CEnC 150.0(a))

☐ Where a T-24 page is not present, insulation with the following R-values shall be used (CEnC 150.0(b), (c)):

- R-13 for 2x4 walls
- R-19 for 2x6 walls
- R-13 for opaque non-framed assemblies
- R-19 for raised floors separating conditioned space from unconditioned space
- R-30 for ceiling and rafters
- R-6 for supply/return ducts and plenums

☐ Verify that insulation is not compressed or buckled and is flush and fully expanded with framing members. Insulation shall be installed according to the manufacturer's installation instructions.

☐ Verify that insulation is flush and fully expanded with framing members. Insulation must have contact with drywall, floor and ceiling—filling the cavity.

☐ Verify all window jams, doors and rough openings are sealed. (CEnC 150.0(a))

☐ Furred spaces such as skylight chases and chimneys shall be supported at open side with plastic or metal straps not more than 12" on center. (Paper faced bats not allowed on open side of furred spaces.)

☐ Draft stops shall be in place.

☐ Verify that top plates at attic and floor shall be covered with insulation. (CEnC 150.0(b), (c))

☐ Verify that all windows, skylights, and doors meet U-factors and SHGC factors per the T-24 page of the approved plans. (CEnC 150.0(q))

FOUNDATION/SLAB/BASEMENT

☐ Verify slab-edge insulation for heater slab floors as required on the T-24 page of the approved plans. (CEnC 110.8(g), CEnC 150.0(f)).

- Insulation shall be protected against damage from UV radiation, moisture, landscaping, etc.

CEILING/ATTIC/ROOF

☐ Verify that insulation shields are installed around gas appliance vents.

☐ Verify that insulation contact (IC)-rated recessed lights are covered with insulation. (CEnC 150.0(k)1.C)

☐ Foam-insulate all penetrations at floor, floor-to-ceiling, and ceiling-to-attic locations, including tub and shower traps. (CRC R302.11)

☐ Attic/crawl space access doors shall have permanently attached insulation using adhesive or mechanical fasteners; the attic/crawl space access shall be gasketed to prevent air leakage. (CEnC 150.0(a))

CATHEDRAL CEILING VENTILATION

☐ Net free ventilating area shall not be less than 1/150 of the space ventilated. Provide 50% of the required ventilating area at the upper portion of the space and the balance at the eave/lower area of the space. (CRC R806.2)

☐ Provide a 1" minimum air space between insulation and roof sheathing and verify that baffles are installed, as required, to provide free passage of air at eave and ridge vents, see CPA Figure 061. (CRC R806.3).

☐ Enclosed rafter spaces shall have cross ventilation for each separate space.

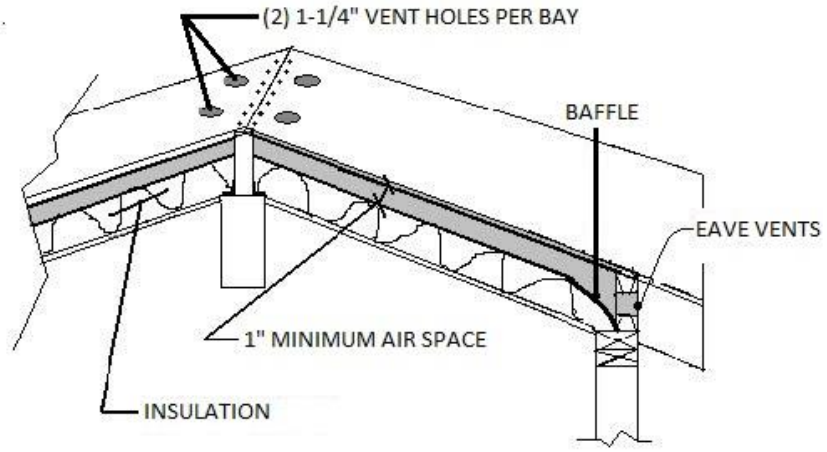

Figure CPA 061 – Ridge Ventilation

UNVENTED ATTIC ASSEMBLIES

☐ Unvented attic assemblies (spaces between the ceiling joist of the top story and the roof rafters) shall be permitted if all the following methods and conditions are met (CRC R806.4):

- Air-impermeable insulation only: Air-impermeable insulation shall be applied in direct contact to the underside of the structural roof sheathing.
- Air-permeable insulation only: In addition to the air-permeable insulation installed directly below the structural sheathing, rigid board or sheet insulation with an R-value of R-4 shall be installed directly above the structural roof sheathing as specified in Table 1 for condensation control.
- Air-impermeable and air-permeable insulation: Air-impermeable insulation shall be applied in direct contact to the underside of the structural roof sheathing as specified in Table 1 for condensation control. The air-permeable insulation shall be installed directly under the air-impermeable insulation.
- Note: Examples of "air-impermeable" insulation include polyurethane spray foam and extruded polystyrene rigid foam. The following are not air-impermeable: fiberglass, rock wool and netted or blown cellulose insulation.