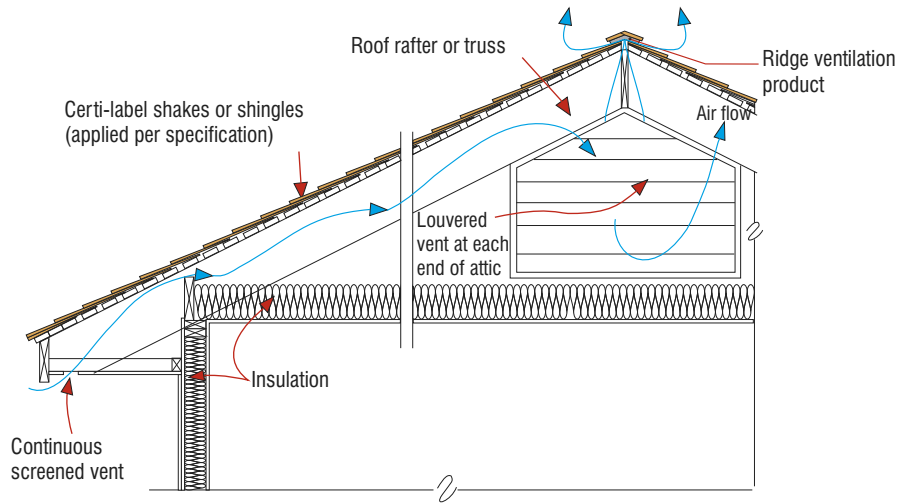


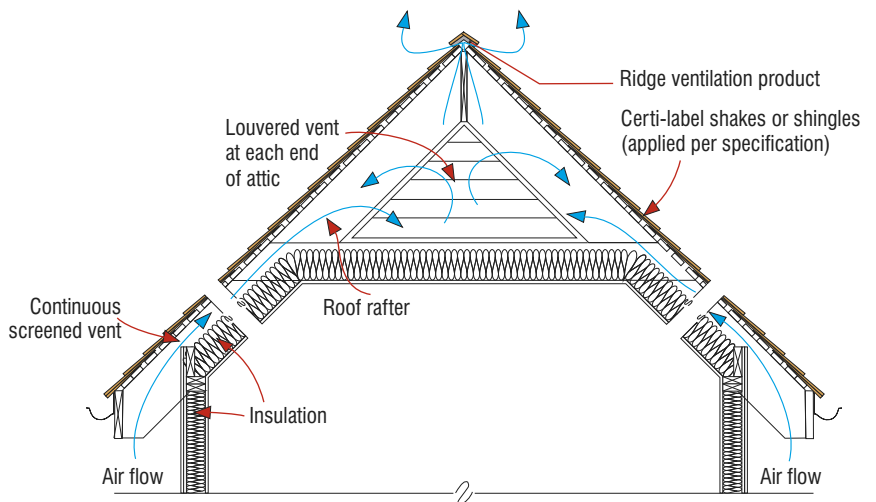
**Ventilation Guidelines**

The importance of good attic ventilation beneath the roof cannot be overemphasized. Such movement of air will prevent or inhibit condensation of moisture on the undersurface of the Certi-label shakes or shingles, or on the roof decks. Vents should be provided at the soffits (eaves) as well as at gable ends (screened to prevent ingress of insects), on roof by using attic roof ventilation or preferably the ridge lines with cross-ventilation desirable. A rule of thumb for adequate ventilation is that the ratio of total net free ventilation area to the area of the attic should be not less than 1:150, with compensation made for screens over vent apertures. In the case of a balanced system a 1 square foot per 300 square feet of floor area may be adequate ventilation. Check with your local building department. Attic fans may be beneficial by supplying additional movement of air in attic spaces. Several roof ventilation construction techniques are shown in Figures 15a-15c.

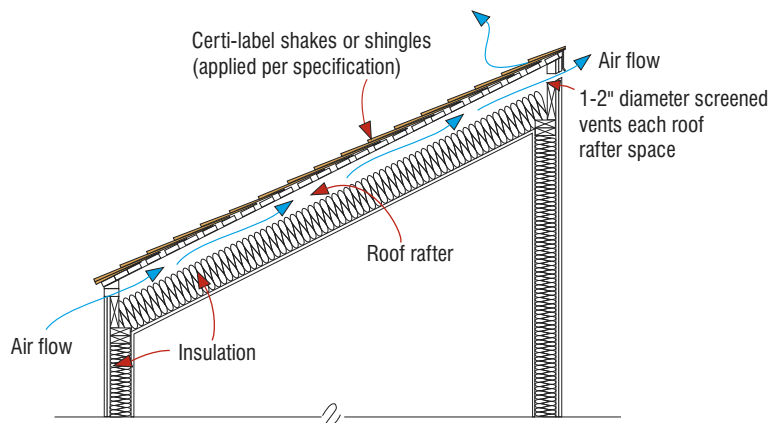
Any modification to the vapor barrier system or addition of a vapor barrier system should only be done after consulting with your local building official or a building envelope specialist. In some areas, building envelope specialists are regulated by government. Please check with local building officials to see if there are professional requirements in your area.



**Figure 15a: Gable Roof With Attic**



**Figure 15b: Cathedral Ceiling With Partial Attic**



**Figure 15c: Shed Roof**

**Figures 15a-15c: Ventilation Details**