

Figure 1: Side-by-side comparison of attic ventilation requirements

Topic	2009 IBC	2009 IRC	
Ventilation openings	<p>Section 1203.2.1 Openings into attic</p> <p>Exterior openings into the attic space of any building intended for human occupancy shall be protected to prevent the entry of birds, squirrels, rodents, snakes and other similar creatures. Openings for ventilation having at least a dimension of 1/8-inch (1.6-mm) minimum and 1/4-inch (6.4-mm) maximum shall be permitted. Openings for ventilation having at least a dimension larger than 1/4 inch (6.4-mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl or similar material with openings having at least a dimension of 1/8-inch (1.6-mm) minimum and 1/4-inch (6.4-mm) maximum. Where combustion air is obtained from an attic area, it shall be in accordance with Chapter 7 of the International Mechanical Code.</p>	<p>Section R806.1 Ventilation required</p> <p>Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross-ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. Ventilation openings shall have at least a dimension of 1/8-inch (1.6-mm) minimum and 1/4-inch (6.4-mm) maximum. Ventilation openings having at least a dimension larger than 1/4 inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth or similar material with openings having at least a dimension of 1/8-inch (1.6-mm) minimum and 1/4-inch (6.4-mm) maximum. Openings in roof framing members shall conform to the requirements of Section R802.7.</p>	
Vent and insulation clearance	<p>Section 1203.2 Attic spaces</p> <p>Blocking and bridging shall be arranged so as not to interfere with the movement of air. A minimum of 1 inch (25 mm) of air space shall be provided between the insulation and the roof sheathing.</p>	<p>Section R806.3 Vent and insulation clearance</p> <p>Where eave or cornice vents are installed, insulation shall not block the free flow of air. A minimum of a 1-inch (25-mm) space shall be provided between the insulation and the roof sheathing and at the location of the vent.</p>	
NFVA ratio	<p>Section 1203.2 Attic spaces</p> <p>The net free ventilating area shall not be less than 1/300 of the area of the space ventilated, with 50 percent of the required ventilating area provided by ventilators located in the upper portion of the space to be ventilated at least 3 feet (914 mm) above eave or cornice vents with the balance of the required ventilation provided by eave or cornice vents.</p>	<p>Section R806.2 Minimum area</p> <p>The total net free ventilating area shall not be less than 1/150 of the area of the space ventilated except that reduction of the total area to 1/300 is permitted provided that at least 50 percent and not more than 80 percent of the required ventilating area is provided by ventilators located in the upper portion of the space to be ventilated at least 3 feet (914 mm) above the eave or cornice vents with the balance of the required ventilation provided by eave or cornice vents. As an alternative, the net free cross-ventilation area may be reduced to 1/300 when a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.</p>	
Unvented attics		<p>Section R806.4 Unvented attic assemblies</p> <p>Unvented attic assemblies (spaces between the top-story ceiling joists and the roof rafters) shall be permitted if all the following conditions are met:</p> <ol style="list-style-type: none"> 1. The unvented attic space is completely contained within the building thermal envelope. 2. No interior vapor retarders are installed on the ceiling side (attic floor) of the unvented attic assembly. 3. Where wood shingles or shakes are used, a minimum 1/4-inch (6-mm) vented air space separates the shingles or shakes and the roofing underlayment above the structural sheathing. 4. In climate zones 5, 6, 7 and 8, any air-impermeable insulation shall be a vapor retarder or shall have a vapor-retarder coating or covering in direct contact with the underside of the insulation. 5. Either Items 5.1, 5.2 or 5.3 shall be met depending on the air permeability of the insulation directly under the structural roof sheathing. <ul style="list-style-type: none"> 5.1 Air-impermeable insulation only. Insulation shall be applied in direct contact with the underside of the structural roof sheathing. 5.2 Air-permeable insulation only. In addition to the air-permeable installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing as specified in Table R806.4 for condensation control. 5.3 Air-impermeable and air-permeable insulation. The air-impermeable insulation shall be applied in direct contact with the underside of the structural roof sheathing as specified in Table R806.4 for condensation control. The air-permeable insulation shall be installed directly under the air-impermeable insulation. 	
Ventilator installation			

CHART

	2012 IBC	2012 IRC
	<p>Section 1203.2.1 Openings into attic</p> <p>Exterior openings into the attic space of any building intended for human occupancy shall be protected to prevent the entry of birds, squirrels, rodents, snakes and other similar creatures. Openings for ventilation having at least a dimension of not less than 1/16 inch (1.6 mm) and not more than 1/4 inch (6.4 mm) shall be permitted. Openings for ventilation having at least a dimension larger than 1/4 inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl or similar material with openings having at least a dimension of not less than 1/16 inch (1.6 mm) and not more than 1/4 inch (6.4 mm). Where combustion air is obtained from an attic area, it shall be in accordance with Chapter 7 of the International Mechanical Code.</p>	<p>Section R806.1 Ventilation required</p> <p>Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross-ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. Ventilation openings shall have at least a dimension of 1/16-inch (1.6-mm) minimum and 1/4-inch (6.4-mm) maximum. Ventilation openings having at least a dimension larger than 1/4 inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, or similar material with openings having at least a dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Openings in roof framing members shall conform to the requirements of Section R802.7. Required ventilation openings shall open directly to the outside air.</p> <p>Exception: Attic ventilation shall not be required when determined not necessary by the code official due to atmospheric or climatic conditions.</p>
	<p>Section 1203.2 Attic spaces</p> <p>Blocking and bridging shall be arranged so as not to interfere with the movement of air. An air space of not less than 1 inch (25 mm) shall be provided between the insulation and the roof sheathing.</p>	<p>Section R806.3 Vent and insulation clearance</p> <p>Where eave or cornice vents are installed, insulation shall not block the free flow of air. A minimum of a 1-inch (25-mm) space shall be provided between the insulation and the roof sheathing and at the location of the vent.</p>
	<p>Section 1203.2 Attic spaces</p> <p>The net free ventilating area shall not be less than 1/150 of the area of the space ventilated.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. The net free cross-ventilation area shall be permitted to be reduced to 1/500 provided that not less than 50 percent and not more than 80 percent of the required ventilating area provided by ventilators located in the upper portion of the space to be ventilated at least 3 feet (914 mm) above eave or cornice vents with the balance of the required ventilation provided by eave or cornice vents. 2. The net free cross-ventilation area shall be permitted to be reduced to 1/300 where a Class I or II vapor barrier is installed on the warm-in-winter side of the ceiling. 3. Attic ventilation shall not be required when determined not necessary by the building official due to atmospheric or climatic conditions. 	<p>Section R806.2 Minimum vent area</p> <p>The minimum net free ventilating area shall be 1/150 of the area of the vented space.</p> <p>Exception: The minimum net free ventilating area shall be 1/300 of the vented space provided one or more of the following conditions are met:</p> <ol style="list-style-type: none"> 1. In Climate Zones 6, 7 and 8, a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling. 2. At least 40 percent and not more than 50 percent of the required ventilating area is provided by ventilators located in the upper portion of the attic or rafter space. Upper ventilators shall be located no more than 3 feet (914 mm) below the ridge or highest point of the space, measured vertically, with the balance of the required ventilation provided by eave or cornice vents. Where the location of wall or roof framing members conflicts with the installation of upper ventilators, installation more than 3 feet (914 mm) below the ridge or highest point of the space shall be permitted.
		<p>Section R806.5 Unvented attic and unvented enclosed rafter assemblies</p> <p>Unvented attic assemblies (spaces between the top-story ceiling joists and the roof rafters) and unvented enclosed rafter assemblies (spaces between ceilings that are applied directly to the underside of roof framing members/rafters and the structural roof sheathing at the top of the roof framing members/rafters) shall be permitted if all the following conditions are met:</p> <ol style="list-style-type: none"> 1. The unvented attic space is completely contained within the building thermal envelope. 2. No interior Class I vapor retarders are installed on the ceiling side (attic floor) of the unvented attic assembly or on the ceiling side of the unvented enclosed rafter assembly. 3. Where wood shingles or shakes are used, a minimum 1/4-inch (6-mm) vented air space separates the shingles or shakes and the roofing underlayment above the structural sheathing. 4. In Climate Zones 5, 6, 7 and 8, any air-impermeable insulation shall be a Class II vapor retarder or shall have a Class III vapor retarder coating or covering in direct contact with the underside of the insulation. 5. Either Items 5.1, 5.2 or 5.3 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing. <ol style="list-style-type: none"> 5.1. Air-impermeable insulation only. Insulation shall be applied in direct contact with the underside of the structural roof sheathing. 5.2. Air-permeable insulation only. In addition to the air-permeable insulation installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing as specified in Table R806.5 for condensation control. 5.3. Air-impermeable and air-permeable insulation. The air-impermeable insulation shall be applied in direct contact with the underside of the structural roof sheathing as specified in Table R806.5 for condensation control. The air-permeable insulation shall be installed directly under the air-impermeable insulation. 5.4. Where preformed insulation board is used as the air-impermeable insulation layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.
		<p>Section R806.4 Installation and weather protection</p> <p>Ventilators shall be installed in accordance with manufacturer's installation instructions. Installation of ventilators in roof systems shall be in accordance with the requirements of Section R903. Installation of ventilators in wall systems shall be in accordance with the requirements of Section R703.1.</p>