



TABLE 501.4.1 PROCEDURE TO DETERMINE MAKEUP AIR QUANTITY FOR EXHAUST APPLIANCES IN DWELLING UNITS

| | ONE OR MULTIPLE POWER VENT OR DIRECT VENT APPLIANCES OR NO COMBUSTION APPLIANCES ^A | ONE OR MULTIPLE FAN-ASSISTED APPLIANCES AND POWER VENT OR DIRECT VENT APPLIANCES ^B | ONE ATMOSPHERICALLY VENTED GAS OR OIL APPLIANCE OR ONE SOLID FUEL APPLIANCE ^C | MULTIPLE APPLIANCES THAT ARE ATMOSPHERICALLY VENTED GAS OR OIL APPLIANCES OR SOLID FUEL APPLIANCES ^D |
|---|---|---|--|---|
| 1. Use the Appropriate Column to Estimate House Infiltration | | | | |
| a) pressure factor (cfm/sf) | 0.15 | 0.09 | 0.06 | 0.03 |
| b) conditioned floor area (sf) | — | — | — | — |
| (including unfinished basements) | | | | |
| Estimated House Infiltration (cfm): [1a × 1b] | — | — | — | — |
| 2. Exhaust Capacity | | | | |
| a) clothes dryer | 135 | 135 | 135 | 135 |
| b) 80% of largest exhaust rating (cfm): | — | — | — | — |
| (not applicable if recirculating system or if powered <i>makeup air</i> is electrically interlocked and matched to exhaust) | | | | |
| c) 80% of next largest exhaust rating (cfm): | not applicable | — | — | — |
| (not applicable if recirculating system or if powered <i>makeup air</i> is electrically interlocked and matched to exhaust) | | | | |
| Total Exhaust Capacity (cfm): [2a+2b+2c] | — | — | — | — |
| 3. Makeup Air Requirement | | | | |
| a) Total Exhaust Capacity (from above) | — | — | — | — |
| b) Estimated House Infiltration (from above) | — | — | — | — |
| Makeup Air Quantity (cfm): [3a - 3b] | — | — | — | — |
| (if value is negative, no makeup air is needed) | | | | |
| 4. For Makeup Air Opening Sizing, refer to Table 501.4.2. | | | | |

- A. Use this column if there are other than fan-assisted or atmospherically vented gas or oil *appliances* or if there are no *combustion appliances*.
- B. Use this column if there is one fan-assisted *appliance* per venting system. Other than atmospherically vented *appliances* may also be included.
- C. Use this column if there is one atmospherically vented (other than fan-assisted) gas or oil *appliance* per venting system or one solid fuel *appliance*.
- D. Use this column if there are multiple atmospherically vented gas or oil *appliances* using a common vent or if there are atmospherically vented gas or oil *appliances* and solid fuel *appliances*.

501.4.2 Makeup air supply.

Makeup air shall be provided by one of the following methods:

1. Passive *makeup air* shall be provided by passive openings according to the following:
 - 1.1. Passive *makeup air* openings from the outdoors shall be sized according to IMC Table 501.4.2.
 - 1.2. Barometric dampers are prohibited in passive *makeup air* openings when any atmospherically vented *appliance* is installed.
 - 1.3. Single passive openings larger than 8 inches (204 mm) diameter, or equivalent, shall be provided with a motorized damper that is electrically interlocked with the largest exhaust system.
2. Powered *makeup air* shall be provided if the size of a single opening or multiple openings exceeds 11 inches (280 mm) diameter, or equivalent, when sized according to IMC Table 501.4.2. Powered *makeup air* shall comply with the following:
 - 2.1. Powered *makeup air* shall be electrically interlocked with the largest exhaust system.
 - 2.2. Powered *makeup air* shall be matched to the airflow of the largest exhaust system.
3. *Makeup air* shall be provided by a combination of passive openings and powered means according to IMC Table 501.4.2 and the following:
 - 3.1. Passive *makeup air* openings shall comply with item 1.
 - 3.2. Powered *makeup air* shall be supplied for the quantity of airflow in excess of the passive *makeup air* opening provided, and it shall be electrically interlocked with the exhaust system.

TABLE 501.4.2 MAKEUP AIR OPENING SIZING TABLE FOR NEW AND EXISTING DWELLING UNITS

| TYPE OF OPENING OR SYSTEM | ONE OR MULTIPLE POWER VENT OR DIRECT VENT APPLIANCES OR NO COMBUSTION APPLIANCES ^A | ONE OR MULTIPLE FAN-ASSISTED APPLIANCES AND POWER VENT OR DIRECT VENT APPLIANCES ^B | ONE ATMOSPHERICALLY VENTED GAS OR OIL APPLIANCE OR ONE SOLID FUEL APPLIANCE ^C | MULTIPLE APPLIANCES THAT ARE ATMOSPHERICALLY VENTED GAS OR OIL APPLIANCES OR SOLID FUEL APPLIANCES ^D | PASSIVE MAKEUP AIR OPENING DUCT DIAMETER ^{E, F, G} |
|---------------------------|---|---|--|---|---|
| | (cfm) | (cfm) | (cfm) | (cfm) | (inches) |
| Passive opening | 1-36 | 1-22 | 1-15 | 1-9 | 3 |
| Passive opening | 37-66 | 23-41 | 16-28 | 10-17 | 4 |
| Passive opening | 67-109 | 42-66 | 29-46 | 18-28 | 5 |

| | | | | | |
|---------------------------------------|---------|---------|---------|---------|----------------|
| Passive opening | 110-163 | 67-100 | 47-69 | 29-42 | 6 |
| Passive opening | 164-232 | 101-143 | 70-99 | 43-61 | 7 |
| Passive opening | 233-317 | 144-195 | 100-135 | 62-83 | 8 |
| Passive opening with motorized damper | 318-419 | 196-258 | 136-179 | 84-110 | 9 |
| Passive opening with motorized damper | 420-539 | 259-332 | 180-230 | 111-142 | 10 |
| Passive opening with motorized damper | 540-679 | 333-419 | 231-290 | 143-179 | 11 |
| Powered makeup air ^H | > 679 | > 419 | > 290 | > 179 | Not applicable |

A. Use this column if there are other than fan-assisted or atmospherically vented gas or oil *appliances* or if there are no *combustion appliances*.

B. Use this column if there is one fan-assisted *appliance* per venting system. Other than atmospherically vented *appliances* may also be included.

C. Use this column if there is one atmospherically vented (other than fan-assisted) gas or oil *appliance* per venting system or one solid fuel *appliance*.

D. Use this column if there are multiple atmospherically vented gas or oil *appliances* using a common vent or if there are atmospherically vented gas or oil *appliances* and solid fuel *appliances*.

E. An equivalent length of 100 feet of round smooth metal duct is assumed. Subtract 40 feet for the exterior hood and ten feet for each 90-degree elbow to determine the remaining length of straight duct allowable.

F. If flexible duct is used, increase the duct diameter by one inch. Flexible duct shall be stretched with minimal sags.

G. Barometric dampers are prohibited in passive *makeup air* openings when any atmospherically vented *appliance* is installed.

H. Powered *makeup air* shall be electrically interlocked with the largest exhaust system.