

9.1.1 Pollution-Control Checklist

Survey the home for pollutants before air-sealing or ventilating the home. Perform the following pollutant-control measures if needed.

- ✓ Repair roof and plumbing leaks.
- ✓ Install a ground-moisture barrier over bare soil in crawl spaces or dirt-floor basements.
- ✓ Verify that dryer ducts and exhaust fans move exhaust air to the outdoors.
- ✓ Verify that combustion-appliance vent systems operate properly.
- ✓ Move paints, cleaning solvents, and other chemicals out of the conditioned space if possible.
- ✓ Air seal between attached garages and a dwelling's conditioned areas.
- ✓ Don't leave un-vented space heaters as a primary heat source.

The dwelling's occupants are often the source of many home pollutants, such as candles, deodorizers, and pesticides. Educate the residents about minimizing such pollutants in their dwellings.

Note: Ventilation specialists now use the term “dwelling” to describe either a single-family home or multifamily living unit, ASHRAE 62.2–2016 now applies to both single-family and multifamily dwellings.

9.2 ASHRAE STANDARD 62.2–2016 VENTILATION

Most dwellings in North America currently rely on air leakage for ventilation. The American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) publishes ventilation standards for dwellings.

Their current standard, ASHRAE 62.2–2016, defines the roles and minimum requirements for mechanical and natural ventilation systems and the building envelope. The roles and requirements intend to provide acceptable indoor air quality in residential buildings.

9.2.1 ASHRAE 62.2–2016 Components

If you air seal dwellings during weatherization, you may need to install whole-dwelling mechanical ventilation systems under ASHRAE 62.2–2016, which has 3 components.

1. Whole-dwelling ventilation.
2. Local ventilation.
3. Natural infiltration credit.

This ventilation standard allows for natural infiltration (air leakage) to contribute toward the required whole-dwelling ventilation rate for single-family homes and horizontally attached multifamily buildings (but not vertically attached multifamily buildings).

In NYS WAP, use of the NYS WAP ASHRAE calculator is required to calculate whole or in-unit dwelling requirements, automatically incorporating the infiltration credit. NYS WAP supplies an ASHRAE calculator to document and assist with the formula-driven approach. As always, contact the TA unit for any additional guidance needed.

9.2.2 Whole-Dwelling Ventilation Requirement

To comply with ASHRAE 62.2–2016, use the NYS WAP ASHRAE calculator to determine the whole-dwelling ventilation airflow requirement.

You can provide this mechanical airflow in 4 ways.

1. A dedicated exhaust or supply fan running continuously or cycling by automatic control.

2. A bathroom or kitchen exhaust fan running continuously or cycling by automatic control.
3. A central air handler drawing filtered outdoor air into its return.
4. A balanced ventilation system such as a heat-recovery ventilator (HRV) or energy-recovery-ventilator (ERV).

Room Pressure Imbalances

If any room in the building exceeds ± 3 pascals pressure with reference to the common area when all interior doors are closed and while the ventilation system is operating, take action to reduce the pressure. Install transfer grilles or jumper ducts as needed to reduce the room to common area pressure difference to less than ± 3 pascals.

Additional Ventilation Guidance

If the ventilation airflow requirement is less than 15 CFM, ASHRAE 62.2–2016 exempts the mechanical-ventilation requirement.

NYS WAP supplies an ASHRAE calculator to document and assist with the formula-driven approach. Use of the NYS WAP ASHRAE calculator is required to determine and justify the ventilation strategy in the project file. As always, contact the TA unit for any additional guidance needed.

Refer to the ASHRAE standard for more details, guidance, and also to the [NYS WAP web page](#) for any approved variances or exceptions that are beyond the scope of this field guide.

9.2.3 Local Exhaust Ventilation Requirement

There are two options for complying with the local ventilation requirements for kitchens and bathroom: demand-controlled exhaust or continuous exhaust.

1. For demand-controlled exhaust, the NYS WAP ASHRAE calculator will specify a minimum of 100 CFM for the kitchen and 50 CFM for each bathroom. An operable window reduces either room's ventilation requirement by 20 CFM.
2. For continuous exhaust specify a minimum of 20 CFM for each bathroom, and 5 ACH for the kitchen (based on volume).

Local Exhaust Deficit

If the existing kitchen or bathroom ventilation doesn't meet the requirements stated here, the NYS WAP ASHRAE calculator will adjust the whole-dwelling ventilation rate required (QFAN Required Mechanical Ventilation) to compensate for the local airflow deficits.

Follow these steps, and enter the data into the NYS WAP ASHRAE tool. The tool will calculate the local-ventilation deficit in CFM that will then be added to the whole-dwelling ventilation rate.

1. Fill out the top half of the NYS ASHRAE calculator with agency and building information, including nearest weather station, # of units, sq. ft. of occupied area in the total building, ceiling height, number of stories, number of bedrooms and number of occupants.
2. Measure the delivered airflow of existing kitchen or bathroom exhaust fans using flow hood, flow grid, or other airflow measuring device, and enter results into the ASHRAE calculator.
3. Subtract 20 CFM for each kitchen or bathroom that has an operable window.

The ASHRAE calculator will display the total local exhaust ventilation deficit in CFM. The calculator will automatically add $\frac{1}{4}$ of this deficit to the required whole-dwelling ventilation rate after you enter your blower door airflow result in CFM50.