



CT WAP Weatherization Guidance No. 18

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Airsealing and How to Calculate the MVG

Airsealing Hours

Airsealing is an inexpensive way to produce energy savings in a home and creates a relatively large savings-to-investment ratio for the client, provided this measure is done correctly. Therefore, agencies are encouraged to do airsealing up to the calculated Minimum Ventilation Guideline (MVG), also known as Minimum Ventilation Rate (MVR), provided that airsealing is not a health and safety risk to the client, meets the savings-to-investment ratio of 1 or more **and** buildings are **not** sealed below the MVG for that dwelling unit.

It is the intention of the CT-WAP program to gain all the benefits that airsealing can provide. Therefore, agencies are allowed to propose hours of air sealing per person per team of two installers working as a team, or six (8) hours total without prior approval from the monitor. If more than (4) hours are necessary, the agency may contact the monitor for approval, which can take the form of a phone conversation.

Agencies should be aware, however, that CT WAP intends to monitor the CFM reduction and hours billed *very closely* to ensure that they are acceptable for what a two-man crew is able to do in that time period. **Airsealing that produces little to no reduction in a large time period will result in disallowed or reduced costs.** Therefore, it is important that agency auditors, crews, and airsealing contractors attend training regularly to improve their skills and that agency staff be available to provide technical assistance on an as-needed basis for those contractors who are unable to produce appropriate CFM reductions.

Minimum Ventilation Guideline Calculations

The Minimum Ventilation Guideline (MVG) is a formula that prevents a home from becoming too tight, which may allow for indoor air quality issues to develop. This formula is dependent upon the type of housing structure that is to be subject to airsealing measures. Therefore, different guidelines are in effect for various housing structures. We are working with CSG to resolve this issue in addressing the various housing stock and until then we are requiring that you calculate the MVG for every unit. The MVG calculation must be handwritten on the MVG line on the INPUT

SHEET/WORK ORDER form. This information must **also** be entered in the notes section of the Audit Summary Screen.

Single-Family, Mobile Homes and Side by Side Duplexes

There is no single standard for all housing structure stock. Instead, agency staff must calculate the MVG from both formulas below and select the higher of the two MVG results.

Formula #1

Formula #1 is based on 15 CFM per occupant. This calculation is as follows:

$$\text{MVG (CFM50)} = 15 \times \text{\# of occupants} \times N$$

Note: Per state requirements, the number of occupants will be **five (5)** *unless* there are more than 5 occupants, at which point the actual # of occupants will be used.

Additionally, the following circumstances will increase the # of occupants over the standard of 5 occupants:

- Every resident smoker increases the number of occupants by 1
- Every pet over seventy-five (75) pounds increases the number of occupants by 1

Formula # 2

Formula #2 calculates the MVG based on .35 natural air changes per hour, and is as follows:

$$\text{MVG (CFM50)} = .35 \times V \times N/60$$

The following definitions and procedures apply to these calculations:

- V = The volume (length x width x height) of conditioned living space expressed in cubic feet, or ft³
- N = the appropriate value from the table below:

	<u># of Stories</u>			
	<u>1</u>	<u>1.5</u>	<u>2</u>	<u>3</u>
N Value*	18.5	16.7	14.8	13

*The N value is slightly different for homes that are poorly shielded or very-well shielded by either other homes or trees. If you encounter a home with a different type of set-up and are curious about the N-value that should be used, please contact your monitor.

When determining the number of stories in the dwelling, count only conditioned living space. Finished basements used as living space will be considered a half story unless over 50% of the walls are exposed above grade. Finished attics used as living space will be considered a half story also unless the volume is greater than 50% of the floor below.

Small Multifamily Buildings (excluding side by side duplexes and SSHP/HUD/Shelters)

The MVG for this type of housing stock is **2000 CFM50**