Report Prepared For: [redacted]
Prepared By: Kevin C Martin, Summers & Zim's, Atglen, PA
Date Of Test: October 6, 2020

How Much Leakage Is Needed For Fresh Air?

The national ventilation standard recommends all the air in your home be exchanged with fresh outside air **6.4 times each day.**

In order to obtain the required fresh air on a yearly average basis, your home needs **1.6 square feet** of air leaks. These leaks should ideally let in clean, fresh outside air (e.g. around windows & doors); not potentially polluted air from attics, garages, crawlspaces, basements, or underground.

Your Home's Test Results

The Infiltrometer has measured **3.4 square feet** of Total Leakage Area in your home.

On average, this will cause approximately **13.1 changes each day.** *(2.0 times more than recommended)*

Exception: if any of the leaks are in the air duct system, your actual air changes may be substantially higher. Duct leaks experience much higher pressures than house leaks. One square inch of duct leakage to the outside has approximately the same impact as 30 square inches of house leaks.

Recommendations

Have a "House Doctor Treatment" performed to reduce excessive air leakage. The highest priority are generally duct leaks, those that let in contaminated air, and large attic floor leaks.

Sealing leaks will improve comfort and indoor humidity control, reduce utility bills, and save money. It can also reduce incoming dust, insects, mold, pollen, car exhaust & other air pollutants.

Even a leaky home occasionally needs ventilation. Ensure your bathroom fans can exhaust at least 70 cubic feet of air per minute. During mild weather, operate fans or crack open windows to maintain sufficient air exchanges.

Houses with good quality, quiet mechanical whole house ventilation can be safely made much tighter than the calculated leakage area requirement above. Consult your HVAC contractor or www.comfortinstitute.org for guidance. Total house leakage is only one factor affecting indoor air quality. Additional tests are often recommended, e.g. an overall pollutant, mold and moisture source survey; ventilation system performance; combustion safety tests for heat exchanger leakage, carbon monoxide and venting competition.

The recommended air exchange rate is based on the ASHRAE Standard 62.2P of 7.5 cubic feet per minute per person (calculated as 2 persons in the first bedroom and 1 thereafter), plus 3 cfm/100 sq.ft. additional, then divided by the house volume on a daily basis. Predicted uncontrolled air exchange rates and minimum leakage area are derived from a mathematical model developed by Lawrence Berkeley Laboratories. The predicted rate is an approximate annual average. Actual rates will be higher during cold/hot, or windy weather, and lower during mild weather.