

# Manage your Moisture

## Control the humidity in your home for maximum comfort

Discussion of the design of your home's HVAC system should include controlling the moisture levels appropriate to the climate in which you reside. The addition of moisture (humidification) may be required in colder climates during the winter season and removed (dehumidification) during the summer months. Extreme moist warm climates may require additional dehumidification beyond what your air conditioner can provide. Your ACCA contractor of choice is the professional who understands the building science of your home and applies the design principles contained in the ACCA design manuals and practices.

### Winter Humidification:

Relative humidity (RH) is the percent of moisture in the air compared to the maximum amount of moisture this air can hold at the same condition. Warm air will hold more moisture than cold air, and as cold ventilation air mechanically or naturally (by infiltration) enters your home, it can be drier than the driest desert and seriously lower the humidity levels in your home. The psychrometrics of air show us that at 70°F air can hold about 12 times as much moisture as 10°F air, and when 10°F outside air is heated to 70°F the humidity level goes from 70% to 7%. Normal household functions (such as cooking, showering, laundry) also have an impact on the relative humidity within your home and hence on your comfort.

Dry air tends to pull moisture from the occupants, the wood and home furnishings, and causing effects as seen on the left side of the humidity level chart. The effects of bacteria, viruses, fungi, respiratory infections, allergic rhinitis and asthma, and ozone production can be minimized by higher humidity levels. Studies have shown that wintertime operation at 68°F / 60% RH provides the same level of occupant comfort as does 72°F / 30% RH; so lower utility bills also result with the addition of moisture to your home.

Automatic, computer controlled humidifiers can control the right humidity levels in your home, providing enough moisture for a healthy comfortable home and within the limits to prevent window and cold surface condensation.

### Summer Dehumidification:

High moisture levels result in occupant discomfort and annoyances and possibly serious health issues as they relate to bacteria, viruses, fungi, mites (dust mites and

mold), allergic rhinitis and asthma, and chemical interactions as seen on the right side of the humidity level chart. Studies show that summertime operation at 78°F / 30% RH provides the same level of occupant comfort as does 74°F / 70% RH. This lower humidity level will provide increased comfort, lower utility bills and less risk of the above health issues associated with high humidity.

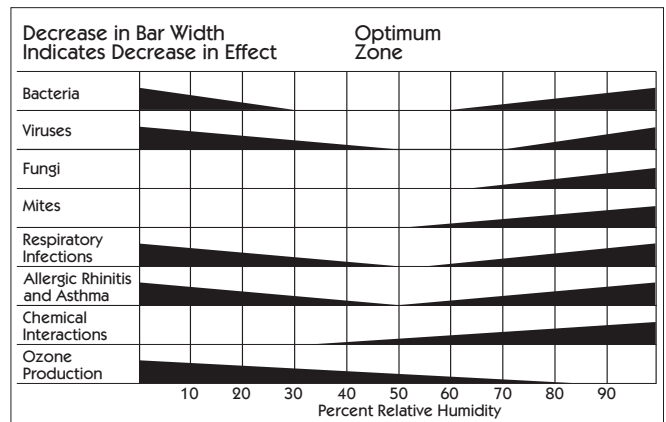
Your air conditioning system and/or stand-alone dehumidifier are designed to remove moisture (latent load) and decrease the RH levels in your home. In humid areas of the country however, your air conditioner or dehumidifier may not be capable of lowering the levels below 60% RH. In such cases, your ACCA quality contractor may suggest alternative equipment and control strategies that include staging, by-pass, reheat or whole house ventilation/dehumidification approaches. Such systems can provide real comfort and greatly reduce aggravations and health issues associated with high humidity.

The design of your heating and cooling system requires more than the installation of a furnace/boiler and air conditioner. Your ACCA quality contractor understands the building science and design principles to bring real comfort and a healthy indoor environment to your home.

The choice is yours: a "comfort/healthy" system, or a furnace/boiler and an air conditioner. Since over 1/3<sup>rd</sup> of your time is spent in your home, it is important to make the right choice.

### Understanding proper humidity levels.

Moisture levels play an important role in providing comfort. When humidity levels are not properly maintained and controlled, aggravating discomforts, health issues and damage to your home and home's furnishings can result. This brochure is being provided by an ACCA quality contractor, to give you a better understanding of the services they can provide in the total design and comfort of a Heating Ventilation and Air Conditioning (HVAC) system.



ACCA is the nationwide nonprofit association of heating, ventilation, air condition, and refrigeration contracting businesses. For over 40 years, ACCA has provided education and research in support of efficient, safe and healthy heating and cooling systems. Learn more at [www.acca.org](http://www.acca.org).



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