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Identifying Causes of High Humidity and its Effects at Home

High humidity issues at home can cause condensation on HVAC ductwork, windows, walls or on surfaces in attics or crawlspace. This condensation can lead to mildew or mold, or cause rotting and failure of wood framing or drywall amongst other building problems.

The "ideal" level of humidity varies by the season, but the chances of having condensation issues are much lower if they are maintained within these ranges:

1. *Summer -> Less than 60%. Ideally between 45% to 55%.*
2. *Winter -> Less than 30%. (This level is less than what some health professionals may advise for winter time symptoms, but humidity levels above this in the winter have a high risk of causing hidden and potentially more harmful condensation issues in the home, especially older homes)*

Visual clues that you may have a moisture or humidity issue in your home:

- ☐ Dampness or efflorescence on foundation walls
- ☐ Condensation, water stains or efflorescence on ductwork
- ☐ Water stains on drywall
- ☐ Mold or mildew on basement walls, roof decking, bathroom ceilings, etc.

Possible Causes or Factors Affecting High Humidity or Moisture Issues in your Home

Water Accumulation/Draining Issues	**Contact:** Landscaper
☐ Home located in a way to accumulate neighbors' runoff water	
☐ Garden against house that is watered a lot	
☐ Downspouts/sump discharge not extended 5ft away from the house to land that grades away from the home	
☐ Clogged downspouts (including underground piping connected to downspouts)	
☐ Crawlspace access doors or vents that are below grade or allow rain water to flow into the crawlspace	

Roofing/Gutter Issues	**Contact:** Roofer
☐ Roof/siding/flashing leaks, especially at critical details such as chimneys, stack pipes, solar system feet, flashing for vertical walls around dormers	
☐ Double shingled roofs which trap moisture between shingle layers	
☐ Clogged or poorly sloped gutters that allow water to overflow instead of going to downspouts	

Plumbing	**Contact:** Plumber
☐ Plumbing leaks, especially small or hidden ones that are in wall cavities or are being absorbed into concrete	
☐ Plumbing stack pipes that are disconnected or venting in wall cavities	

Foundation Water Issues	**Contact:** Foundation Water Proofer
☐ Standing water in the crawlspace, basement, or garage	
☐ Inoperable or broken sump pump, or sump pump without sealed lid	
☐ High water table - typical of homes near the bay, ocean, or other body of water	
☐ Open floor drains that are not properly piped to a drainage system	
☐ Dampness or efflorescence on foundation walls	
☐ Missing exterior foundation waterproofing coating (homes before ~1970)	

Caused by Human Behaviors	**Contact:** DIY
☐ Using portable humidifiers in the home and setting them at >30% in Winter	
☐ Humidifier being “on” during the summer, (typically unintentionally)	
☐ Large number of plants, firewood, fish tanks, indoor hot tub/pool/steam room or similar in the home	
☐ More showering, cooking, bathing than normal (for ex. having guests in the house)	
☐ Often using shower without using Bathroom Fan capable to exhaust steam/humidity	

Insulation, Air Leaks and Ventilation Systems	**Contact:** Home Performance Company
☐ Gravel / dirt crawlspace with improperly installed vapor barrier (not sealed or is double layered, for ex.)	
☐ Bathrooms with showers without properly routed bathroom fans moving at least 50CFM	
☐ Bathroom/kitchen fans or dryers that are routed into the living space, attic, crawlspace, or garage	
☐ Open windows or air leaks to the outside allowing warm humid air to enter the home in summer	
☐ Air leaks to outside such as at the band joist, cantilevers, attic chases, garage ceilings, dormer spaces	
☐ Air leaks allowing warm air inside home near cold HVAC supply ductwork or cold water piping in summer	
☐ Low attic insulation levels, especially over bathrooms with showers or kitchens	
☐ Lack of a Whole Home Ventilation solution (ie a fresh air return connected to HVAC)	
☐ Poor attic insulation, air sealing and ventilation that causes ice damming and wets the roof	

HVAC or Ductwork	**Contact:** HVAC Company
☐ High temperature drop in your HVAC supply in the Summer (>22 degrees F)	
☐ Restricted HVAC airflow due to poor supply design, closed supplies, or dirty filters/coils	
☐ Low air conditioner refrigerant charge	
☐ HVAC or dehumidifier condensate not draining to the outside	
☐ Thermostat settings which allow rooms to be below 70 degrees in Summer or 60 Degrees in Winter	
☐ Uninsulated ductwork in unconditioned spaces like attics, crawlspaces, or joist cavities	
☐ Leaky ductwork especially in attics, crawlspaces or joist cavities	
☐ Depressurized basement due to closed supply registers or imbalance of supply/return air flow	