



Case Study - Health Hazard Evaluation

Chronic Obstructive Pulmonary Disease (COPD)

White Dust from Humidifier

Project Description: IAQ Occupant Complaint, Apartment Building

Scope of Services: AET was contacted by the manager of an apartment complex to evaluate an IAQ complaint from a resident suffering from COPD. The resident alleged her apartment environment was making her COPD symptoms worse. The carpet of the apartment had been steam cleaned (no chemicals) prior to AET's on-site evaluation. There were no pets or apparent tobacco smoke odors in the apartment

AET's Investigative Approach/Tools:

1. **Visual Inspection:** No musty or VOC odors were noted upon entry into the apartment. No evidence of moisture intrusion was observed. The apartment appeared relatively clean with limited particulate accumulations on surfaces. Inspection of the PTAC unit providing heat and air conditioning to the apartment unit found the interior component surfaces clean and dry. Two tenant-owned small air filtration units and one ultrasonic/cool moisture humidifier was operating within the apartment.
2. **Moisture Testing:** No areas of moisture impact were identified via Infrared thermography or moisture meter testing.
3. **Particle Counter Sampling:** Total particulate level (0.3 micron size) were approximately 7 times higher within the apartment unit compared to outdoors. The source of the elevated particulate readings was quickly traced to the operation of the tenant-owned humidifier. The humidifier was observed releasing "white dust" into the air of the apartment with some dust accumulation on adjacent apartment surfaces.
4. **Tape Lift Sampling:** White dust accumulations were tested microscopically and found to contain insignificant levels of mold spores or fiberglass.

AET experience: White dust discharge from ultrasonic humidifiers is not uncommon. The white dust is a byproduct of the minerals found in tap water. White dust is generally not harmful, but the use of an ultrasonic humidifier is not recommended by the CDC or the American Thoracic Society within individuals with COPD. Humidifiers require regular cleaning and filter changing. White dust levels can be significantly reduce by using distilled water in the humidifier. Mold growth will occur in poorly maintained humidifiers.

Conclusion: Recommendations were made for the tenant to consult their pulmonary specialist regarding continued humidifier use and following manufacturers instructions for cleaning and filter changing for the humidifier. A cursory cleaning of the apartment was also performed and air scrubbing of the apartment completed over a 48 hour period using an air filtration device equipped with HEPA filtration.

When you need professional help or advice, email Alan Sutherland, CIH, CHMM at a.sutherland@aetinc.biz or call 610-891-0114. We provide nationwide services; phone consultations are free. Check out the full range of environmental contracting/consulting services we provide at our website www.aetinc.biz.