

CASE STUDY



MULTI-FAMILY
HOUSING

Controlling Humidity in Affordable Multi-Family Housing for Health, Comfort and Property Protection

Controlling humidity in affordable multi-family housing units is a continual challenge as most building owners, architects, engineers, property managers, and even tenants can attest. Guarding against the potential damage inflicted by excess moisture can be a full-time job. Experienced professionals know there is only one proven, cost-effective way to beat moisture: Early Prevention.

Unfortunately, you cannot control tenant activities that lead to moisture problems, which are further compounded by today's energy efficient building practices. Building codes focused on higher energy efficiency result in better insulated, more tightly constructed spaces. These buildings, and the spaces within them, require far less runtime of the air conditioning units, which presents a challenge since the air conditioning units typically provide the dehumidification. Less air conditioning run time means less moisture removal and a much greater potential for microbial growth.

PROBLEM

An affordable multi-family housing complex in climate zone 4 dealt with a significant mold issue caused by excessive humidity in several of the units. The complex was designed and built using energy efficiency best practices. Two-stage cooling equipment was installed with the understanding that the equipment would provide better moisture control. To meet code requirements regarding indoor air contaminants, a fresh air ventilation control and intake damper were installed as well.

As it turned out, the two-ton condensing systems were grossly oversized for the one-bedroom units. Further compounding the problem was the humid air being brought in through the fresh air intake. To try and resolve the issue, tenants kept lowering the thermostats and over-cooling the space. Unfortunately, the lower surface temperature increased the interior dew points to a level where sufficient water activity was present to support microbial growth on the walls.

Following a normal humid summer, the resident of a one-bedroom, second-floor, 700-square foot apartment began noticing mold on the walls of her bedroom, the hallway, and the kitchen. According to the EPA, indoor relative humidity (RH) should be maintained between 35% and 50% for maximum comfort, but the RH in this apartment was measured at 74%. The tenant confirmed that she kept the thermostat temperature set at an uncomfortable 66° F because of how muggy her apartment always felt.



Microbial growth on the walls prior to the installation of an Ultra-Aire MD33 In-Wall Dehumidifier.



Conditions inside apartment were 74% RH and 66°F.



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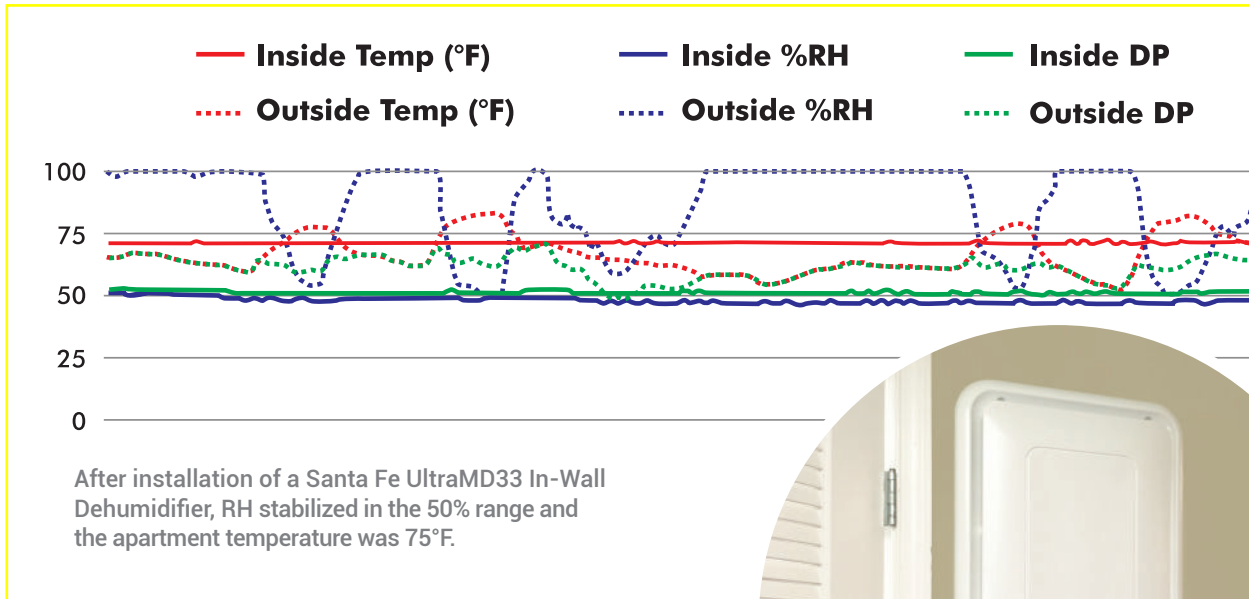
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SOLUTION

The tenant was temporarily relocated while the unit was remediated and a **Santa Fe UltraMD33 In-Wall Dehumidifier** was installed. Almost immediately, the RH stabilized in the 50% range, with dew point values remaining consistently low, while the interior temperature was maintained at a comfortable and affordable 75° F. The resident reported an immediate difference in the feel of her apartment, with the sticky, clammy feeling she had endured now eliminated. As a result of this success, property management installed Santa Fe UltraMD33 In-Wall Dehumidifiers in all of the building's first and second floor units.



Why Install an In-Wall Dehumidifier?

Indoor humidity cannot be effectively or efficiently controlled with an air conditioning system alone. Excessive moisture can contribute to poor indoor air quality, property damage, mold, comfort complaints, and reputational risk and liability.

Including a dedicated in-wall dehumidifier as an integral part of the mechanical system protects the physical investment and creates a comfortable, healthier living environment for residents.