Makeup Air

Perfect Temperature / Perfect Humidity

The HumidiFlex System (IAHS): The Future of Commercial Humidity Control

*Say goodbye to overpriced dehumidifiers. The **HumidiFlex System** is a breakthrough innovation that transforms standard off-the-shelf air conditioners into **high-performance, precision-controlled dehumidifiers**—without the premium price tag.*

- **Cost-Efficient**: Achieve superior humidity control at a fraction of the cost of traditional systems.
- **Advanced Control**: Enjoy robust, customizable humidity management tailored to your commercial environment.

Controlling humidity through a makeup air unit is crucial for several reasons, primarily revolving around occupant comfort, health, building integrity, and operational efficiency.

Here's why it's important:

- Occupant Comfort and Health:
    - Optimal Humidity Range: Maintaining relative humidity (RH) within an ideal range, typically between 30% and 60%, is essential for human comfort. Extremes of either high or low humidity can lead to discomfort.
    - Reduced Health Issues: High humidity (above 60%) can promote the growth of mold, mildew, bacteria, and dust mites, which can trigger allergies, asthma, and other respiratory problems. Low humidity (below 30%) can dry out mucous membranes, making individuals more susceptible to infections and causing skin and eye irritation.
    - Virus Virulence: Research suggests that certain airborne viruses, like the influenza virus, lose much of their virulence at RH levels around 50%.
- Building Integrity and Protection:
    - Preventing Condensation: High humidity can lead to condensation on windows, walls, and other surfaces. This moisture can cause damage to building materials, including wood rot, deterioration of paper products, and

corrosion of metal components. In colder climates, concealed condensation within building envelopes can cause significant structural damage over time.

- Protecting Furnishings and Equipment: Wood furniture, floors, and other sensitive materials can warp, shrink, or expand excessively in conditions of very low or very high humidity. Sensitive electronic equipment can also be affected by extreme humidity levels.

- Operational Efficiency and Equipment Performance:
  - HVAC System Performance: Controlling the humidity of the incoming makeup air reduces the latent load on the building's primary HVAC system. This means the air conditioning system doesn't have to work as hard to remove excess moisture, leading to more efficient operation and potentially lower energy costs.
  - Process Control: In industrial or manufacturing settings, precise humidity control is often critical for product quality, process stability, and the performance of machinery. Fluctuations in humidity can lead to costly errors or product defects.
- Maintaining Positive Air Pressure:
  - Makeup air units are designed to replace air that is exhausted from a building (e.g., by kitchen hoods, laboratory fume hoods, or general ventilation systems). Without adequate makeup air, a building can develop negative air pressure. This can lead to uncontrolled infiltration of unconditioned and potentially humid outside air, drafts, difficulty opening doors, and reduced effectiveness of exhaust systems. By providing controlled, conditioned makeup air, humidity levels can be managed more effectively, and proper building pressure can be maintained.

In essence, controlling humidity through makeup air units is not just about comfort; it's a fundamental aspect of ensuring a healthy, safe, and well-functioning indoor environment, while also protecting the building's structure and optimizing energy usage.