

Trane® CleanEffects™ Air Cleaner: Certified asthma & allergy friendly® with Proven Allergen Reduction



Overview

[Trane® CleanEffects™ Air Cleaner](#), manufactured by a leading global provider of indoor comfort solutions and a brand of Ingersoll Rand, has become the first air cleaner of its kind to achieve [asthma & allergy friendly® Certification](#). Testing by Airmid Healthgroup demonstrated the air cleaner's ability to significantly reduce airborne allergens, particulate levels, and biological contaminants such as mold spores and viruses, ensuring healthier indoor environments when properly maintained.

Background

About Trane®:

[Trane®](#) is a globally recognized leader in indoor comfort solutions, known for innovative and high-performance products designed to improve air quality and comfort in residential and commercial spaces.

About Airmid Healthgroup:

Airmid specializes in rigorous testing and validation of products designed to enhance indoor air quality. With expertise in allergens, mold, and airborne particles, Airmid provides robust assessments to support health-related product claims and certifications.

Context:

Central forced air systems can circulate biological particulates such as viruses, mold, and allergens (e.g., dust mite allergen, animal dander, and pollen) throughout indoor spaces. Effective air filtration systems, such as Trane® CleanEffects™, are essential for mitigating these risks and supporting a healthier indoor environment.

The Challenge

Indoor air is often compromised by airborne particulates and biological contaminants that travel through central forced air systems, including:

1. **Allergens:** Dust mite allergen, pet dander, and pollen.
2. **Biological Contaminants:** Mold spores and viruses.
3. **Airborne Particles:** Particulates stirred up by room disturbances.

To earn the asthma & allergy friendly® Certification, Trane® CleanEffects™ needed to demonstrate superior efficacy in reducing these contaminants while maintaining efficiency over time through effective maintenance practices.

Goals

- **Primary Goal:** Achieve asthma & allergy friendly® Certification by demonstrating the ability to reduce allergens, biological contaminants, and airborne particles.
 - **Secondary Goal:** Validate the efficiency and maintainability of the CleanEffects™ air cleaner through performance testing and simulated long-term use.
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Solution/Approach

Airmid Healthgroup conducted an extensive series of studies to evaluate the performance of Trane® CleanEffects™ in reducing airborne particulates and allergens under controlled conditions:

1. Customized Testing System:

- The CleanEffects™ air cleaner was installed into [Airmid's modified ASHRAE 52.2 test duct](#), connected to a room-sized environmental test chamber.
- This unique setup simulated real-world conditions of a central forced air system in a building.

2. Contaminant Reduction Testing:

- Allergens, mold spores, and Influenza A virus were introduced into the chamber, followed by air circulation through the test duct.
- Room disturbances were simulated to keep particles airborne.

3. Biological Contaminant Performance:

- **Aspergillus niger mold spores:** The device reduced airborne levels by over 99%.
- **Influenza A virus:** Airborne levels were reduced by

99.9% within 35 minutes.

4. **Electrostatic Plate Cleaning Validation:**

- Electrostatic air cleaners require periodic cleaning to maintain performance. Airmid simulated dust accumulation through an accelerated loading process.
 - The CleanEffects™ air cleaner was cleaned and reassessed, showing restored performance efficiency.
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Key Results

- **Biological Contaminant Reduction:**
 - 99% reduction in airborne **Aspergillus niger** mold spores.
 - 99.9% reduction in airborne **Influenza A virus** within 35 minutes.
 - **Particulate and Allergen Reduction:**
 - Significant reductions in airborne particulate levels and allergens were observed compared to natural decay.
 - **Maintained Efficiency Post-Cleaning:**
 - Cleaning the electrostatic plates effectively restored the device's performance efficiency, confirming the importance of routine maintenance.
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Impact

Healthier Indoor Environments: Trane® CleanEffects™ provides effective filtration to reduce exposure to allergens, mold, and viruses, contributing to better respiratory health for occupants.

Pioneering Certification: As the first air cleaner of its kind

to earn asthma & allergy friendly® Certification, CleanEffects™ sets a new standard for air filtration in central forced air systems.

Emphasis on Maintenance: Validation of cleaning efficacy underscores the importance of regular maintenance in ensuring consistent performance over time.

Lessons Learned

- **Effective Filtration Is Essential:** Central air systems require advanced filtration solutions like CleanEffects™ to mitigate airborne contaminants.
 - **Maintenance Sustains Performance:** Regular cleaning of electrostatic plates is critical for maintaining device efficiency and effectiveness.
 - **Certification Drives Trust:** Independent validation through asthma & allergy friendly® Certification builds consumer confidence and sets industry benchmarks.
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Conclusion

Trane® CleanEffects™ Air Cleaner, tested and validated by Airmid Healthgroup, demonstrates exceptional performance in reducing allergens and biological contaminants, earning it the prestigious asthma & allergy friendly® Certification. This groundbreaking achievement highlights the importance of advanced air filtration systems and proper maintenance in creating healthier indoor environments.

Contact Us

Interested in validating your cleaning technology or other products? [Contact Airmid Healthgroup](#) to learn how our comprehensive testing services can help you achieve impactful results and consumer trust.

Related links and Tests

Modified ASHRAE 52.2 duct

Allergen Laboratory Overview

Virology Laboratory Overview

Environmental Test Chambers