

Why VaughanAir's DuraDuct ASTM E2236 Differs from the Industry Standard ASTM E2336 and How It Compares to UL 2221

Introduction

When selecting fire-rated grease duct enclosures, ASTM E2336 has been recognized as an industry standard, particularly for wrap manufacturers, ensuring compliance with fire resistance and safety requirements. Traditionally, engineers relying on ASTM E2336 listed wraps must adhere to code required materials such as 16-gauge steel and 18-gauge stainless steel with field welded joints.

At VaughanAir, we set ourselves apart by not only carrying an ASTM E2336 listing, which was tested and certified by Intertek, but also achieving UL 1978 certification for the inner grease duct construction. The UL 1978 listing is critical for grease ducts as it ensures long term durability, leak resistance, and structural support while maintaining code compliance in commercial kitchens. Without this certification, grease ducts may pose a higher fire risk, fail inspections, or expose stakeholders to liability. By obtaining both ASTM E2336 and UL 1978 listings, our VaughanAir DuraDuct KEX product meets the highest standards for grease duct safety and provides a UL 2221 equivalent solution for comprehensive fire protection.

1. ASTM E2336: The Benchmark for Fire-Rated Grease Duct Enclosures

ASTM E2336 is a well-established standard for fire-resistant grease duct enclosure systems, designed to ensure safety in commercial kitchen ventilation. It outlines test methods to assess the performance of enclosure materials and grease duct systems under different fire conditions. Below is a breakdown of its key tests.

Key Fire Tests in ASTM E2336:

- **Internal Fire Test** – Simulates a grease duct fire at **2,000°F (1,093°C) for 30 minutes**, after a 4-hour soak at 500F, to ensure fire containment in the event of a grease fire.
- **External Fire Test** – Evaluates fire engulfment for **2 hours at 1,850°F**, ensuring the duct withstands external fire conditions.
- **Hose Stream Test** – Tests structural integrity after exposure to high heat, ensuring the system resists thermal shock.

These tests ensure that grease duct enclosures can contain fires, protect adjacent structures, and maintain structural integrity under real-world conditions

2. VaughanAir DuraDuct Equivalent Standards to UL2221

Test Requirements	ASTM E2336/UL 1978	UL 2221
Internal Fire Resistance	Yes	Yes
External Fire Resistance	Yes	Yes
Hose Stream Test	Yes	Yes
Structural Integrity	Yes (UL 1978)	Yes
Accepted by NFPA & IMC	Yes	Yes

Both standards have the same fire resistance and mechanical integrity requirements.



ASTM E2336 Internal Fire Test



ASTM E2336 Engulfment

3. VaughanAir’s Certification: Fully Tested & Listed

VaughanAir’s ASTM E2336 listing, tested and certified by Intertek, confirms that our grease duct enclosure system meets the industry’s highest fire safety standards. To eliminate any confusion or concerns, we took the extra step of having an engineer at Intertek, a recognized testing authority, conduct a thorough evaluation of the DuraDuct KEX testing. This evaluation confirmed that our DuraDuct KEX system meets all UL 2221 testing and performance requirements, as documented in the attached approval.

By choosing VaughanAir’s DuraDuct KEX, you are ensuring:

- Code compliant fire safety solutions that meet NFPA 96, IMC, and IBC requirements
- A listing equivalent to UL 2221, eliminating concerns over compliance
- Industry accepted certification through accredited third-party testing

- Verified performance through a rigorous evaluation process conducted by Intertek
- Increased quality assurance from a factory fabricated system.

Conclusion

For engineers and contractors considering a pre-fabricated system, peace of mind comes from choosing a product that carries both UL 1978 and ASTM E2336, which is equivalent to UL 2221. VaughanAir's DuraDuct provides the highest level of fire protection, code compliance, and material flexibility while also delivering significant labor savings. Our ASTM E2336 listed grease duct enclosures offer a UL 2221 equivalent solution that meets all regulatory and safety requirements, ensuring a seamless installation process.

Contact VaughanAir for a turnkey solution that simplifies compliance and enhances efficiency.