



What is ASTM 1704-19 Standard?

ASTM International, formerly known as the American Society for Testing and Materials, is a globally recognized organization that develops and publishes technical standards for a wide range of materials, products, systems, and services. These standards are designed to improve product quality, enhance safety, facilitate market access and trade, and build consumer confidence.

The ASTM F1704-19 standard is a specification developed by ASTM International, specifically for the performance of recirculating systems used in commercial kitchens. This standard covers the testing and performance criteria for grease removal devices, such as filters and extractors, used in these systems. The goal of ASTM F1704-19 is to ensure that these devices effectively capture and remove grease-laden vapours from the air, improving air quality and reducing fire hazards in commercial kitchens.

Key Aspects of ASTM F1704-19 Standard

1. Scope:

- This standard applies to grease removal devices used in recirculating systems for commercial kitchens.
- It specifies the requirements for testing the efficiency of these devices in capturing and removing grease particles.

2. Performance Criteria:

- **Grease Removal Efficiency:** Devices must demonstrate a certain level of efficiency in removing grease particles from the air.
- **Airflow Resistance:** The standard includes criteria for the resistance to airflow that these devices introduce to the ventilation system.
- **Durability and Maintenance:** Requirements for the durability of the devices and the ease of their maintenance and cleaning are included.

3. Testing Methods:

- The standard outlines specific testing procedures to evaluate the performance of grease removal devices.
- Tests are designed to simulate real-world conditions in commercial kitchens, ensuring the devices perform effectively under typical usage scenarios.

4. Safety and Compliance:

- Devices must meet safety requirements to prevent fire hazards associated with grease accumulation.
- The standard ensures that devices comply with applicable safety regulations and codes.

5. Documentation and Labelling:



- Manufacturers must provide clear documentation and labelling for their grease removal devices, including performance data and maintenance instructions.

Importance of ASTM F1704-19

- **Fire Safety:** Effective grease removal reduces the risk of grease fires in commercial kitchens, enhancing overall safety.
- **Air Quality:** By efficiently capturing grease particles, these devices help maintain better air quality in commercial kitchens.
- **Regulatory Compliance:** Adhering to this standard helps manufacturers and commercial kitchen operators comply with local fire and health codes.

In summary, the ASTM F1704-19 standard provides a comprehensive framework for evaluating the performance and safety of grease removal devices used in recirculating systems in commercial kitchens. It ensures these devices are effective in maintaining air quality and reducing fire hazards, contributing to a safer and healthier kitchen environment.

Who is accredited to conduct tests for the ASTM F1704-19 standard?

Tests for the ASTM F1704-19 standard is typically conducted in specialized laboratories equipped to handle the specific requirements of performance testing for grease removal devices. These laboratories must have the necessary equipment and expertise to carry out the tests accurately and reliably. The testing facilities may include:

1. **Third-Party Testing Laboratories:** Independent labs accredited by relevant bodies (such as ISO/IEC 17025) are often used to ensure unbiased and accurate results. These labs follow the standardized procedures outlined in ASTM F1704-19.
2. **Manufacturer's In-House Laboratories:** Some manufacturers may have their own testing facilities designed to comply with ASTM standards. These labs are used for internal testing and product development, but results are often verified by third-party labs for certification purposes.
3. **Certification Bodies:** Organizations like Underwriters Laboratories (UL), Intertek, and others that provide certification services may also conduct or oversee the testing to ensure compliance with the standard.

Typical Testing Procedures

1. **Sample Preparation:** Grease removal devices are prepared according to the standard's specifications, ensuring they are ready for testing.
2. **Grease Loading:** The devices are subjected to a controlled amount of grease-laden air to simulate real-world conditions in a commercial kitchen.



3. **Efficiency Measurement:** The efficiency of the devices in capturing and removing grease particles from the air is measured using standardized methods.
4. **Airflow Resistance Testing:** The resistance to airflow introduced by the grease removal devices is tested to ensure they do not significantly impede ventilation.
5. **Durability and Maintenance Evaluation:** Tests are conducted to assess the durability of the devices and the ease with which they can be cleaned and maintained.

Documentation and Reporting

After testing, detailed reports are generated that include:

- **Performance Data:** Efficiency ratings, airflow resistance measurements, and other relevant performance metrics.
- **Compliance Verification:** Confirmation that the devices meet all the requirements outlined in ASTM F1704-19.
- **Maintenance Recommendations:** Guidelines for maintaining the devices to ensure continued compliance and performance.

Importance of Accredited Testing

Using accredited testing facilities ensures that the results are reliable, reproducible, and recognized by regulatory bodies and customers. It also helps manufacturers and operators demonstrate compliance with safety and performance standards, which is critical for obtaining necessary certifications and approvals for commercial kitchen operations.