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ANSI/ASHRAE Standard 154-2022
Ventilation for Commercial Cooking Operations

NOTE

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FOREWORD

ASHRAE Standard 154 provides design criteria for acceptable performance in commercial cooking ventilation systems and is intended to serve as a template for standardization, harmonization, and ongoing revision of related model and adopted codes and to bring consistency to design requirements and applications of commercial kitchen ventilation systems.

The 2022 revision includes numerous changes to harmonize the standard with the International Mechanical Code® *(IMC), 2019* ASHRAE Handbook—HVAC Applications*, and NFPA 96,* Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*. For a complete description of these and other changes, see Informative Appendix H.*

1. PURPOSE

The purpose of this standard is to provide design criteria for acceptable performance in commercial cooking ventilation systems.

2. SCOPE

2.1 This standard covers

a. kitchen hoods,
b. exhaust systems, and
c. replacement air systems.

2.2 This standard shall not be used to circumvent any safety, health, or environmental requirements.

3. DEFINITIONS

appliance: a cooking device or apparatus used in a kitchen that consumes energy provided by gas, electricity, solid fuel, steam, or another fuel source.

appliance duty level: an appliance rating category based on the exhaust airflow required to capture, contain, and remove the cooking effluent and products of combustion under typical operating conditions with a non-engineered wall-mounted canopy hood (based on ASHRAE RP-1362 [1]). This is different from the historical approach in which duty levels were based on the temperature of the cooking surface. The following appliance duty classifications are used in this standard:

a. ***light:*** a cooking process requiring an exhaust airflow rate of less than 200 cfm/ft (310 L/s/m) for capture, containment, and removal of the cooking effluent and products of combustion.
b. ***medium:*** a cooking process requiring an exhaust airflow rate of 200 to 300 cfm/ft (310 to 460 L/s/m) for capture, containment, and removal of the cooking effluent and products of combustion.
c. ***heavy:*** a cooking process requiring an exhaust airflow rate of 300 to 400 cfm/ft (460 to 620 L/s/m) for capture, containment, and removal of the cooking effluent and products of combustion.
d. ***extra-heavy:*** a cooking process requiring an exhaust airflow rate greater than 400 cfm/ft (620 L/s/m) for capture, containment, and removal of the cooking effluent and products of combustion.

approved: acceptable to the authority having jurisdiction.

balancing damper: a mechanical device located in a duct that is intended to regulate airflow.

capture area: area within an exhaust hood that contains cooking effluent until it is exhausted.

capture and containment: an exhaust hood's ability to capture and contain the cooking effluent and heat generated during cooking operations.

centrifugal fan: see *exhaust fan*.

certified: see *listed*.

commercial cooking appliance: an appliance specifically designed to be used in a food service establishment kitchen, such as a restaurant or cafeteria kitchen. Appliances designed for residential use shall be treated as commercial appliances when installed in commercial food service establishments.