

05/25/17 Pollution Control Units UL/ETL Listing

UL 710 VS UL1978 Listing

Test Standard for Pollution Control Units

The following information is intended as a guide to understanding pollution control units and the importance of why UL 1978 Standard for Grease Ducts should be used when specifying a pollution control unit.

The engineers and food service consultants who select and specify kitchen systems carry a great deal of responsibility. That's why it's important to specify certified products designed for optimal performance, reliability and safety.

About Pollution Control Units

Pollution Control Units (PCU), also known as Air Purification Units or Exhaust Filtration Systems, have been in use in commercial kitchen exhaust systems for decades. However, due to new requirements of many municipalities and local Authorities having Jurisdiction (AHJ), they are quickly becoming an increasingly integral part of commercial kitchen exhaust systems. Using PCUs help reduce the release of grease, smoke and odor particulates from cooking into the surrounding space and atmosphere. They are almost necessary in multi-purpose buildings where the kitchen exhaust can be routed horizontally through a side wall near street level rather than needing to install long runs of vertical ductwork to reach a rooftop exhaust fan. In addition, eliminating grease, smoke and odor from the exhaust air is desirable to the occupants of nearby buildings as it prevents the buildup of grease on roofs, walls, sidewalks, and cars.

A PCU serves three main purposes. 1. To exhaust grease laden air from the commercial kitchen space through a Type I kitchen hood is initial filtration of the grease laden air approximate 50% at the kitchen hood. The PCU is connected to the kitchen hood by a fully-welded or fluted grease duct running from the hood to the PCU. The air is pulled through the duct and PCU by an exhaust fan at the PCU outlet side. 2. As the air is pulled through the PCU, multiple stages of increasingly efficient filtration 95% or 99% remove grease (water degreaser section available) and smoke particulates. 3. Carbon filters or neutralization solution for odor abatement (95%) from the exhaust airstream.

PCUs Codes and Standards

The International Mechanical Code (IMC) requires that a Type I hood be used where the appliances produce grease or smoke. The hood is then connected to the duct by liquid-tight welded or brazed joints. The duct run from the hood collar to the exhaust fan is also to be constructed such that all joints and seams are of a continuous liquid-tight weld or braze, unless the duct is a factory-built grease duct that is listed in accordance with UL 1978 - Standard for Grease Ducts. It then follows that if grease laden air is to be exhausted through a PCU to an exhaust fan that the PCU should actually be part of the grease duct.

UL/ ETL - Evaluation and Listing of PCUs

When PCUs were first developed, there was not a specific standard to which the products could be evaluated (and at the time of this writing there still is not a standard for PCUs). This leaves the determination of what tests are required for listing to independent third parties such as UL and ETL.

Underwriters' Laboratories viewed PCUs as a grease duct and determined that evaluation PCUs to the heat related tests from UL 1978 - Standard for Grease Ducts were the proper tests to obtain an UL Listing for PCUs. (Page 3)

ETL determined that evaluating PCUs to the heat related tests from UL 710 - Standard for Exhaust Hoods for Commercial Cooking Equipment, listed on page 3, were adequate to obtain an ETL Listing for PCUs.

There are stark differences between the tests required to obtain listings to each of the standards. Reviewing the comparison on page 3, it becomes apparent that the tests for UL 1978 are more rigorous and better suited to evaluate grease duct, whereas UL 710 was developed for listing exhaust hoods. Grease duct is to function as an air tight and liquid tight conduit for grease laden kitchen exhaust air. As such, it should have sound structural integrity, prevent the leakage of any grease or smoke to the exterior of the duct, as well as contain any fire within the duct, even when subjected to the extreme temperatures associated with grease fires.

Summary

PCUs are, in fact, an extension of the grease duct, it follows that UL 1978 is clearly the correct standard to use for the safety evaluation of PCUs.

There are many manufacturers of PCUs. The specifications for most PCU manufacturers state that the unit is listed to UL 710 - Standard for Exhaust Hoods for Commercial Cooking Equipment. Only a few manufacturers specify that their PCUs are listed to UL 1978 - Standard for Grease Ducts. Based on the increased rigor of UL 1978 for fire safety, it is recommended that all PCUs be tested and evaluated to UL 1978. Specify with confidence, choose a UL 1978 PCU.