

UL Client Test Data Program

The UL Client Test Data Program authorizes Greenheck Fan Corp. to test our products in our certified laboratory and submit the laboratory test results to UL for review. Based upon the testing data, UL will either certify the product or choose to come up and witness the product being tested.

Greenheck laboratories are UL inspected once a year for compliance of test data collection and submittal, data

acquisition equipment is reviewed for proper usage, and calibration certificates are inspected. Overall lab procedures are inspected. Our manufacturing areas are UL inspected quarterly by UL to ensure Greenheck complies with UL standards when certifying product. UL performs a walk-through of our facilities and a random check of products being manufactured.

	CERTIFICATE OF PARTICIPATION Issued by Underwriters Laboratories Inc.
Greenheck Fan Corporation 1136 Industrial Ave. (Facility 4 & 14) Schofield, WI 54476 USA	
has been assessed and found to be eligible to participate in Underwriters Laboratories Inc. Client Test Data Program (CTDP)	
DA File : DA652 Issued: October 16, 2008 Expires: October 16, 2009	 Jodine Hepner Global Process Owner, Data Acceptance Program

Standard For Safety For Ceiling Dampers UL 555C

Scope

These requirements and methods of tests apply to ceiling dampers intended for installation in hourly rated fire resistive floor-ceiling and roof-ceiling constructions. Fire resistive assemblies are investigated in accordance with the Standard for Fire Tests of Building Construction and Materials, UL 263.

Ceiling dampers are intended for use in air handling duct outlets which penetrate membrane ceilings of hourly-rated fire resistive assemblies, or for installation in the ceiling membrane of such assemblies which utilize the plenum space for return air. They are designed for use as alternatives to previously tested hinged-door sheet metal type dampers installed at the bottom of sheet metal air ducts over each duct outlet. Ceiling dampers intended for installation in other types of fire resistive assemblies are investigated in accordance with the Standard for Fire Tests of Building Construction and Materials, UL 263, and are not covered in this standard.

The investigation of ceiling dampers involves a comparison of the fire resistance performance of a manufactured ceiling damper with that of a hinged-door sheet metal damper, installed in identical suspended ceiling constructions, to determine that the substitution of the ceiling damper does not reduce the hourly fire resistance rating of the assembly previously rated with the hinged-door type damper.

Ceiling dampers are not assigned hourly ratings.

Dampers are assembly components designated for use in specific hourly rated fire resistive assemblies incorporating air duct outlets penetrating protective membrane ceilings. The fire resistance performance of the maximum size ceiling damper submitted for test is compared with the performance of the hinged-door type damper protecting the smallest size duct outlet specified in a rated assembly and having the maximum hourly rating for which fire resistance of a specified duration is required.

Tests conducted in accordance with these requirements are intended to demonstrate the performance of ceiling dampers during the period of fire test exposure, and are not intended to determine acceptability for use after exposure to fire.

It is the intent that tests conducted in accordance with the test methods described herein develop data to enable regulatory authorities to determine the acceptability of ceiling dampers for use in floor-ceiling and roof-ceiling assemblies of the specified or shorter duration.

A product that contains features, characteristics, components, materials, or systems new or different from those in use when the Standard was developed, and that involves a risk of fire, electric shock, or injury to persons, shall be evaluated using the appropriate additional component and end-product requirements as determined necessary to maintain the level of safety for the user of the product as originally anticipated by the intent of this Standard.

Smoke Dampers

UL 555S

Scope

1.1 These requirements cover smoke dampers intended for use in heating, ventilating, and air conditioning (HVAC) systems. Smoke dampers are intended:

1. To restrict the spread of smoke in HVAC systems that are designed to be automatically shut down in the event of a fire, or
2. To assist with the control of pressure differentials across smoke barriers when the HVAC system is part of an engineered smoke control system.

1.1 revised January 11, 2002

1.2 Dampers covered by these requirements are evaluated for use as either:

1. Smoke Dampers - For use in HVAC systems where ducts pass through smoke barriers.
2. Combination Fire and Smoke Dampers - For locations in HVAC systems where a fire damper and a smoke damper are required at a single location.

1.2 revised January 11, 2002

1.3 Smoke dampers are used for the protection of openings in smoke barriers or in engineered smoke control systems in accordance with the Standard for Installation of Air Conditioning and Ventilating Systems, NFPA 90A. These damper assemblies are intended for installation in accordance with codes such as the BOCA National Mechanical Code, the SBCCI Standard Mechanical Code, the ICBO Uniform Mechanical Code, and the International Mechanical Code.

1.3 revised January 11, 2002

1.4 Deleted January 11, 2002

1.5 Deleted January 11, 2002

1.6 Combination fire and smoke dampers shall also comply with the applicable requirements in the Standard for Fire Dampers, UL 555.

1.7 A product that contains features, characteristics, components, materials, or systems new or different from those covered by the requirements in this standard, and that involves a risk of fire or of electric shock or injury to persons shall be evaluated using appropriate additional component and end-product requirements to maintain the level of safety as originally anticipated by the intent of this standard. A product whose features, characteristics, components, materials, or systems conflict with specific requirements or provisions of this standard does not comply with this standard. Revision of requirements shall be proposed and adopted in conformance with the methods employed for development, revision, and implementation of this standard.

Fire Dampers

UL 555

Scope

1.1 These requirements cover fire dampers that are intended for use where air ducts penetrate or terminate at openings in walls or partitions; in air transfer openings in partitions; and where air ducts extend through floors as specified in the Standard for Installation of Air-Conditioning and Ventilating Systems, NFPA 90A. Fire dampers are intended for installation in accordance with codes such as the BOCA National Mechanical Code, SBCCI Standard Mechanical Code, ICBO Uniform Mechanical Code, and the International Mechanical Code.

1.1 revised January 10, 2002

1.2 Fire dampers are evaluated for use as either:

1. Fire Dampers for Static Systems - For HVAC systems that are automatically shut down in the event of a fire or for air transfer openings in walls or partitions,
2. Fire Dampers for Dynamic Systems - For HVAC systems that are operational in the event of a fire, or
3. Combination Fire and Smoke Dampers - For locations in HVAC systems where a fire damper and a smoke damper are required at a single location.

1.3 Under these requirements a fire damper is subjected to a standard fire exposure, controlled to achieve specified temperatures throughout a specified time period, followed by the application of a specified

standard hose stream. This exposure by itself is not representative of all fire conditions; conditions vary with changes in the amount, nature, and distribution of fire loading, ventilation, compartment size and configuration, and heat sink characteristics of the compartment. These requirements provide a relative measure of fire performance of fire damper assemblies under these specified fire exposure conditions. Any variation from the construction or conditions that are tested such as method of installation and materials has the potential to substantially change the performance characteristics of the fire damper assembly.

1.4 Fire dampers for static systems (no airflow through the damper) are intended to close automatically upon the detection of heat by a heat responsive device.

1.4 revised January 10, 2002

1.5 Under these requirements, combination fire and smoke dampers and fire dampers for dynamic systems are exposed to standardized heat and airflow conditions and are evaluated for dynamic closure under these conditions.

1.6 Combination fire and smoke dampers shall also comply with the applicable requirements in the Standard for Smoke Dampers, UL 555S.

1.7 Fire dampers for dynamic systems are intended for use where the airflow is operational at the time of fire, such as in a smoke control system, or from other situations in which the fan system is operational at the time of a fire.

1.7 Fire dampers for dynamic systems are intended for use where the airflow is operational at the time of fire, such as in a smoke control system, or from other situations in which the fan system is operational at the time of a fire.

1.8 Where fire dampers are required in ducts that penetrate fire barriers and where the duct is also used as part of a smoke control system, the system designer shall ascertain which type of fire damper is appropriate for the application. Fire dampers for dynamic systems are evaluated only for dynamic closure under heated airflow conditions. Combination fire and smoke dampers that have an elevated temperature rating are evaluated for dynamic closure under heated airflow conditions and they are also evaluated to operate under heated air conditions.

1.9 Tests conducted in accordance with these requirements are intended to demonstrate the performance of fire dampers during the period of fire test exposure and are not intended to determine acceptability of fire dampers for use after exposure to fire.

1.10 It is the intent that tests conducted in accordance with the test methods described herein develop data to enable regulatory authorities to determine the acceptability of fire damper assemblies for use in locations where fire resistance of a specified duration is required.

1.11 Fire dampers are intended to close automatically upon the detection of heat by the use of a fusible link or other heat responsive device.

1.12 These requirements do not cover:

Performance of the fire damper assembly in walls, partitions, or floors constructed of materials other than those tested.

The performance of the fire damper assembly when installed using methods other than those fire tested.

Measurement of heat transmission through a fire damper assembly.

Measurement of the degree of control or limitation of the passage of smoke or products of combustion through the fire damper assembly.

1.13 A product that contains features, characteristics, components, materials, or systems new or different from those covered by the requirements in this standard, and that involves a risk of fire or of electric shock or injury to persons shall be evaluated using appropriate additional component and end-product requirements to maintain the level of safety as originally anticipated by the intent of this standard. A product whose features, characteristics, components, materials, or systems conflict with specific requirements or provisions of this standard does not comply with this standard. Revision of requirements shall be proposed and adopted in conformance with the methods employed for development, revision, and implementation of this standard.

Power Roof Ventilators For Restaurant Exhaust Appliances

Scope

1.1 These requirements cover roof or wall-mounted ventilators for restaurant exhaust appliances.

1.2 Power ventilators for restaurant exhaust appliances covered by these requirements are intended for installation in accordance with the Standard of the National Fire Protection Association for the Installation of Equipment for the Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment, NFPA 96.

1.3 Power ventilators for restaurant appliances shall comply with the Standard for Power Ventilators, UL 705, modified in that wiring system shall not be located in the path of travel of exhaust products. The ventilator rating is not limited to 5 horsepower.

Power Ventilators

UL 705

Scope

1.1 These requirements cover power ventilators of the roof-and wall-mounted types and duct fans of the straight-through type intended for commercial or industrial use, residential fans intended for heated and conditioned air and for connection to permanently installed wiring systems in accordance with the National Electrical Code, NFPA 70.

1.1 revised effective November 23, 2006

1.2 These requirements do not cover the following:

- a) Ventilating equipment such as attic, wall-insert, ceiling-insert, household hood, window fans, or canopy fans or blowers;
- b) Air-moving equipment with integral air tempering means;
- c) Dryer type fans used for drying carpets or floors;
- d) Household and commercial blower inflator type fans;
- e) Evaporative coolers; evaporative cooler pumps, including retrofit pumps;
- f) Air filtering appliances;
- g) Deodorizers and air fresheners;
- h) Component fans;
- i) Low voltage component fans;
- j) Fans and blowers that circulate air, such as desk, ceiling-suspended, and hassock fans;
- k) Ventilators rated more than 600 volts;
- l) Ventilators employing universal motors rated more than 250 volts;
- m) Air heaters equipped with fans;
- n) Draft fans for furnaces;
- o) Heating-ventilating units;
- p) Blowers employed as components in equipment such as furnaces, mechanical-refrigeration equipment, or air conditioners;
- q) Fusible links and similar equipment that may be provided to disconnect a fan or close shutters in the event of fire;
- r) Ventilators specifically intended for use in exhausting any of the following: gases other than air, atmospheres causing corrosion to the ventilator, air with water spray, or flammable vapors; or
- s) Ventilators for the removal or conveyance of dust, stock, or refuse.
- t) Microwaves, ventilating and otherwise; and
- u) Ducted and non-ducted heat recovery units.