



What's Behind The New Standard in Dryer Booster Fans and what this means for specifiers and Code officials.

D_{efinition}

Dryer Exhaust Duct Power Ventilators (DEDPVs) –Underwriters Laboratories (UL) has developed a supplement to its UL Standard 705, specifically for ventilators used for dryer exhaust. CSA Group (CSA) adopted this requirement, via CSA Standard C22.2 No. 113-15, which supports the installation that exceeds the allowable exhaust duct length for clothes dryers. The maximum length of the exhaust duct shall be determined by the dryer exhaust duct power ventilator (DEDPV) manufacturer's installation instructions.

Today's homeowner demands increased functionality and flexibility in the location of laundry facilities. The preference of having the laundry area closer to the bedroom is an example of one of these construction trends. The dryer location preference often results in the contractor (i.e., including designers, engineers, and architects) having to re-design plans and also to meet regulatory requirements such as:

1. Long dryer exhaust duct runs with multiple bends,
2. Extended drying time,
3. Increase in waste of energy,
4. Dryer inefficiency, and
5. Interference with contractor's original plan to comply with applicable building codes.

No builder wants to tell a homeowner that they cannot have the laundry room located where they want. Currently, the building industry is restricted by regulations (e.g., applicable building codes, CSA and UL standards) as to how to implement the customer's desires for better function capability. Such restriction problems include:

1. Overly long duct work (i.e., potential fire hazard, longer dryer time, etc.);
2. Existing fan model (i.e., limited performance capability);
3. Customer preference (i.e., dryer location, dryer type, etc.); and
4. National Building Code (NBC) criteria, along with the future International Residential Code (IRC) requirements

Thus, building contractors need to find products that resolve these problems and meet the customer requirements. A properly applied dryer exhaust ventilator, preferably one that meets safety standard CSA C22.2 No. 113-15 and is verified compliant via such agencies as CSA Certified, UL Listed, ETL Listed Mark (Intertek), etc., is the only solution. Fantech has the product, DPV22-2, to solve the dryer ventilation problem.

These devices, commonly known as 'booster fans', incorporate a pressure-sensing switch that automatically turns the ventilator on when the dryer is energized and helps overcome the resistance created by the additional duct. A contractor may decide to install a device that compensates for the added restriction in an overly long duct in order to maintain airflow, thus assuring that hot, moist, and lint-laden air is safely exhausted to the outside.

Background

In 2012, UL together with CSA developed a supplement to UL Standard 705 that specifically addresses the safety and performance of ventilators used to facilitate proper dryer exhaust and has given the product a new name, Dryer Exhaust Duct Power Ventilator (DEDPV). Consequently, when the International Residential Code (IRC) released its 2015 building code, it included provisions for the specific use of DEDPVs.

The UL testing standards for DEDPV's help to ensure that dryer exhaust ventilators can safely and effectively assist in the ventilation of a residential capacity dryer. The standard's tests prove functionality of required safety features, provisions for maintenance, proper air velocities for lint management, etc. UL's DEDPV standard has established a baseline for dryer exhaust ventilators for the future. Building inspectors and local code criteria can now require 'UL Listed' or 'CSA Certified' DEDPVs for installations in their communities. As well, architects and engineers can specify 'UL Listed' or 'CSA Certified' DEDPVs for their projects, knowing that the safety of these DEDPV installations is backed by globally recognized independent testing and standards organizations.

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Fantech's Dryer Booster Ventilator

The Fantech's, DPV22-2, dryer exhaust duct power ventilator (DEDPV) has been specially designed to solve the problem caused by a long duct run on clothes dryers, due to the homeowner location requirement. When the dryer is operating, Fantech's pressure sensing switch automatically turns the DEDPV on. The DEDPV will turn itself off after the dryer stops. The wall-mounted indicator panel with a low voltage LED display lets the dryer operator know that the DEDPV is operating properly. The panel will also alert the homeowner of problems such as no power, blocked ventilation duct, locked motor rotor, and low speed conditions.

Fantech has taken on this customer challenge and has developed its product to exceed the National Building Code (NBC) requirements (i.e., more safe precautions) and meet the new additional requirements of the International Residential Code (IRC) for dryer exhaust. The IRC standard has structured the industry into a standardization format that allows for longer ventilation ducts, according to the dryer booster ventilator manufacturer's specifications.

Benefits of (DEDPVs)

Fantech's newest dryer booster ventilators meet CSA tested criteria (e.g., operation and key features) for adequate air velocities, temperature sensing mechanism, provides a clean-out access, and error notification. As technology advances, Fantech has maintained its leading market edge and competitiveness in producing dryer booster ventilators that meet the needs of its customers.

Some benefits of the Fantech dryer booster ventilator, DPV22-2, are:

1. Galvanized steel housing, no plastic;
2. Backward inclined blades on the impeller to minimize lint gathering;
3. Boosts dryer exhaust in the duct run by up to 130 feet;
4. Airflow up to 170 CFM;
5. Auto shut down in the event of a fire (i.e., to prevent fire from spreading); and
6. Wall-mounted indicator panel assures homeowner of correct operation.

Standard Features

1. Dryer Exhaust Duct Power Ventilator (DEDPV) are 'approved for application'.
2. Pressure-sensing switch automatically turns on the fan.
3. LED indicator display panel and temperature limit switch.
4. An efficient 4-inch fast clamp for easy installation and maintenance.
5. Performance certified by Home Ventilating Institute (HVI).
6. Safety certified by CSA to Standard C22.2 No. 113-15.
7. Five-year factory warranty

Maintenance

Fantech's dryer booster fans are designed for minimum maintenance that includes the following activities:

1. Fan bearings are sealed and provided with an internal lubricating material, no additional lubrication is necessary.
2. Fan impeller may accumulate lint. Periodic inspection, based upon dryer usage, should be performed to ensure that the fan impeller is not obstructed or loaded with lint. Under normal operating conditions, the ventilator should be inspected at a minimum of every Six-(6) Months.
Note: excessive fan impeller noise or vibration may be an indication of lint buildup on the impeller. To inspect and clean the impeller:
 - a. Disconnect the incoming power supply at the source;
 - b. Remove the duct from the fan inlet and remove any lint buildup on the impeller; and
 - c. Reconnect the duct to the fan. Turn power supply on.

Troubleshooting

This is a simple procedure to verify proper operation of Fantech's, DPV22-2, dryer booster fan. It should be run at set-up to verify that the system is operating correctly. In normal operation, the system will indicate the status of the booster fan. However, this process can also be repeated as a system diagnostic. Generally, if the indicator LED is not illuminated it is OK to run the test. Should you notice any behavior other than that described below, shut the dryer off and wait at least 5 minutes to allow the system to reset and then run the test again.

1. Start the dryer and run it for a period of 1 minute.
2. The indicator LED should illuminate in about 10 seconds after the dryer starts.
3. The booster fan should stop 5 to 10 minutes after the dryer stops.
4. Indicator LED should remain illuminated for 5 to 10 minutes after the dryer stops.
5. If the indicator LED does not illuminate or flashes, refer to the error indication section in the operating instruction manual. Otherwise, the booster fan is functioning correctly.

How Are DEDPVs Different?

DEDPVs differ from other dryer booster fans in the following features besides being approved for the specific application by UL or CSA:

1. DEDPV fan housings must be manufactured from metal, never plastic.
2. A DEDPV must also shut down in the event of a dryer fire, so as not to facilitate the spread of fire in the home.
3. A DEDPV must automatically energize when the dryer is operated.
4. An integral pressure switch is used to sense dryer operation and energize the fan.
5. A DEDPV must indicate proper fan operation to the dryer operator as well as notify the dryer operator in the event of a fan failure.

Conclusion

In the residential market, building contractors (i.e., including designers, engineers, and architects) know that meeting the customer requirements is paramount. If the customer desires a specific dryer location beyond the maximum code duct length or exceeds manufacturers maximum allowable duct length, then Fantech's DEDPV approved product, DPV22-2, is the answer for the contractor. Fantech's product meets applicable regulatory requirements for DEDPVs and it offers easy maintenance.

Fantech takes the position of maximum safety for its product. Therefore, Fantech has aggressively implemented the new 2015 requirements from the International Residential Code (IRC) into this product, instead of exclusively abiding to the National Building Code (NBC) requirements. Fantech believes that the IRC requirements provide a safer product for users. In addition, Fantech believes that the IRC requirements will become part of the NBC criteria in the future. Thus, it is best for the users to have these added safety precautions in the product now instead of waiting for the NBC regulatory agency to specify these safety requirements.

Points to Consider

1. **According to the National Fire Prevention Association (NFPA), the leading cause of clothes dryer fires is from lint build-up in the dryer or the dryer duct.** A DEDPV or Dryer Booster fan from Fantech maintains an airflow that keeps lint suspended while exhausting it to the outside, thereby reducing the risk of fire.
2. **Spontaneous combustion can occur in the dryer after the dryer stops operating due to high heat and no airflow.** The DEDPV continues to operate for a short period of time after the dryer stops, which cools the clothes and lessens the risk of spontaneous combustion.
3. **Dryers don't have an indicator light to tell if there is a build-up of lint in the duct.** A safety feature of the DPV22-2 is a visual indicator panel. This provides the user with a visual indication of correct operation or indication of a pressure increase due to a blocked duct. This advanced warning allows the user to take preventive action to clean the dryer exhaust duct.
4. **Most dryers are limited to a duct run length of 35 feet.** Using a DEDPV or Dryer Booster Fan can increase the duct run up to 130 feet, as the fan relieves the pressure in the extended duct allowing the dryer to work more efficiently.
5. **The number of elbows in the duct length does not make a difference in selecting the type of duct hood.** Dryer duct hoods use a venting system that is conditional upon the type of duct hood. The duct hood can be louvered or angled. An angled duct hood requires less duct length than a louvered duct hood.
6. **The exhaust duct system should be supported and secured.** A dryer duct must be at least 4 inches in diameter or at least the size of the dryer outlet. The exhaust duct must not extend into or through HVAC ducts or plenums.
7. **If flexible metal duct must be used, use the semi-rigid type.** If possible, rigid aluminum or rigid galvanized steel duct should be used (i.e., especially if the duct is to be concealed).
8. **Exhausting a dryer near or next to an air conditioning or heat pump condensing unit should be avoided.** The expelled lint can collect and clog the condenser fins and will likely require continual condenser cleaning

Technical Specification for DPV22-2*

Voltage	120 VAC	Max Equivalent Duct Length	130 Ft
Frequency	60 Hz	Fan Impeller Speed	2,559 RPM
Phase	1	Max Temperature of Transported Air	60°C
Rated Power	83 W	Insulation Class	B
Current	0.73 A	Enclosure Class, Motor	44 IP
Weight	4.54 Kg	Certificate	HVI

Note: *Per HVI's certified rating program, charted air flow performance has been derated by a factor base on actual test results and the certified rate at 0.2 inches WG. Approved for use with electric dryers only. CSA exclusive as of the date of this printing.