
INTERNATIONAL RESIDENTIAL CODE —MECHANICAL

RM3-03/04 M1411

Proposed Change as Submitted:

Proponent: Carl A. Longino, County of Greenville, SC

Revise as follows:

**M1411
REFRIGERATION HEATING AND
COOLING EQUIPMENT**

Add new text as follows:

1411.4 Auxiliary drain pan. Category IV condensing appliances shall be provided with an auxiliary drain pan where damage to any building component will occur as a result of stoppage in the condensate drain piping system. Such auxiliary drain pan shall be provided with drain piping or a water-level detection device installed in accordance with the applicable provisions of Sections M1411.3.1 and M1411.3.2.

(Renumber remaining sections)

Reason: Evaporators and cooling coils are no longer the only equipment that produce condensate. All condensing furnaces are equipped with exhaust fans with drain ports that require drains to be ran to outside. Most manufacturers of condensing furnaces recommend a pan under their equipment. However a recommendation is not enforceable. Furnace drains are equally subject to stoppage and obstructions as cooling or evaporator coils, produce the same condensate, and damage building components in the same way.

Cost Impact: This code change will increase the cost of construction.

Committee Action: **Approved as Submitted**

Committee Reason: Based on the proponent's published reason.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Robert Adkins, Prince William County, VA, representing VPMIA/VBCOA, requests Approval as Modified by this Public Comment.

Modify proposal as follows:

1411.4 Auxiliary drain pan. Category IV condensing appliances shall be provided with an auxiliary drain pan where damage to any building component will occur as a result of stoppage in the condensate drainage piping system. Such auxiliary drain pan shall be provided with

drain piping or a water-level detection device installed in accordance with the applicable provisions of Sections M1411.3.1 and M1411.3.2. Such pans shall be installed in accordance with the applicable provisions located in Section M1411.3.

Exception: Fuel fired appliances that automatically shut down operation in the event of a stoppage in the condensate drainage system.

Commenter's Reason: The IRC committee approved this proposal as submitted; however this comment offers a few enhancements which are the same as submitted in FG16-03/04. The main improvement is the additional exception provision that allows appliances to be installed without an auxiliary pan if they are manufactured with shutdown features in the event of condensate stoppage. It will also automatically include more alternatives as approved in M13-03/04 part 2.

RM5-03/04 M1501

Proposed Change as Submitted:

Proponents: Guy Tomberlin, Fairfax County, VA, representing VPMIA/VBCOA

Rene' M. Beliveau; Guy McMann, City of Golden, CO; Jefferson County, CO, representing Colorado Chapter of Plumbing and Mechanical Officials

Add new text as follows:

SECTION 1501
GENERAL

1501.1 Outdoor discharge. The air removed by every mechanical exhaust system shall be discharged to the outdoors at a point where it will not cause a nuisance and from which it cannot again be readily drawn in by a ventilating system. Air shall not be exhausted into an attic, soffit, ridge vent or crawl space.

Exception: Whole-house ventilation-type attic fans that discharge into the attic space of dwelling units having private attics shall not be prohibited.

(Renumber remaining sections)

Reason: (Tomberlin) This is the language used in the IMC. It makes it clear that the code does not intend for moisture from bath exhaust to be discharged into an attic or crawl space area.

(Beliveau) There is STILL a problem with this code not addressing all exhaust outlets within this exhaust chapter. While other sections of this chapter provide similar requirements for specific systems such as cloths dryers, range hoods, and overhead exhaust hoods, this chapter is silent on toilet or bathroom exhaust, on whole house fans, and on other mechanical environmental exhaust systems (such as from laundry rooms, spas, or saunas). It is important to clarify that it is inappropriate to discharge most mechanical environmental exhaust systems, which frequently discharge moisture laden air, into attics, crawl spaces or other building cavities. This new proposed text is pulled verbatim from the Section 501.2 of the IMC and will clear up any misconception as to where exhaust systems must terminate. Although the new text in section R303.4.2 somewhat addresses the situation, it

is not completely addressing the issue of exactly where the exhaust may or may not terminate. Simply stating that it not create a nuisance is too subjective and isn't good enough. With the mold and moisture damage and health issues currently being debated and litigated, it is necessary to remove any ambiguity within the code relative to the required mechanical exhaust discharge locations.

Cost Impact: None

Committee Action: **Disapproved**

Committee Reason: The proposed terms "nuisance" and "readily drawn in" are vague and could result in inconsistent enforcement.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Charles Gerber, Henrico County, VA, representing VPMIA/VBCOA, requests Approval as Modified by this Public Comment.

Modify proposal as follows:

SECTION 1501
GENERAL

1501.1 Outdoor discharge. The air removed by every mechanical exhaust system shall be discharged to the outdoors ~~at a point where it will not cause a nuisance and from which it cannot again be readily drawn in by a ventilating system.~~ Air shall not be exhausted into an attic, soffit, ridge vent or crawl space.

Exception: Whole-house ventilation-type attic fans that discharge into the attic space of dwelling units having private attics shall not be prohibited.

(Renumber remaining sections)

Commenter's Reason: This is consistent with committee action of RM9. The committee comment on this proposal suggested removing the ambiguous language "nuisance" and "readily drawn in". That's all this modification incorporated.

RM8-03/04

M1501.3

Proposed Change as Submitted:

Proponent: Guy Tomberlin, Fairfax County, VA, representing VPMIA/VBCOA

Revise as follows:

1501.3 Length limitation. The maximum length of a clothes dryer exhaust duct shall not exceed 25 feet (7620 mm) from the length of the duct shall be reduced 2.5 feet (762 mm) for each 45-degree (0.79 rad) bend and 5 feet (1524 mm) for each 90-degree (1.6 rad) bend. The maximum length of the exhaust duct does not include the transition duct.

Exceptions: ~~Where a clothes dryer booster fan is installed and listed and labeled for the application, the maximum length of the exhaust duct, including any transition duct, shall be permitted to be accordance with the booster fan manufacturer's installation instructions. Where a clothes dryer booster fan is installed and not readily accessible from the room in which the dryer is located, a permanent identifying label shall be placed adjacent to where the duct enters the wall. The label shall bear the words "this dryer exhaust system is equipped with a remotely located booster fan".~~

2. (No change)

Reason: This entire exception is based on a requirement that cannot be complied with, namely "listed and labeled for the application". A listing does NOT exist for "clothes dryer booster fans," therefore, it is impossible to install a booster fan in a clothes dryer exhaust system and comply with Section 1501.3, exception # 1. Misapplication is occurring in the fact that many jurisdictions have begun to adopt and enforce the IRC and exception number one is a VIOLATION in two aspects. First, a listing is not available for the fan to be used as a booster for exhaust in a clothes dryer system. Secondly, clothes dryers themselves are required to be listed and labeled. The installation instructions are included in such listing and NO manufacturers include provisions for booster fans to be installed as an accessory to any clothes dryer exhaust system, therefore, the installation of any such fan is a violation of the appliance listing.

The following is available for appliances on the market today, provided 4" rigid metal duct is used in conjunction with a 4" exhaust hood termination:

1. Kenmore brand dryers exhaust system may extend in accordance with the following:
 - a. 64 feet with no elbows
 - b. 54 feet with 1 elbow
 - c. 44 feet with 2 elbows
 - d. 35 feet with 3 elbows
 - e. 27 feet with 4 elbows
2. Whirlpool brand dryers exhaust system may extend in accordance with the following:
 - a. 64 feet with no elbows
 - b. 54 feet with 1 elbow
 - c. 44 feet with 2 elbows
 - d. 35 feet with 3 elbows
 - e. 27 feet with 4 elbows
3. Maytag brand dryers exhaust system may extend in accordance with the following:
 - a. 65 feet with no elbows
 - b. 54 feet with 1 elbow
 - c. 44 feet with 2 elbows
 - d. 36 feet with 3 elbows
 - e. 28 feet with 4 elbows
4. General Electric brand dryers exhaust system may extend in accordance with the following:
 - a. 90 feet with no elbows
 - b. 60 feet with 1 elbow
 - c. 45 feet with 2 elbows
 - d. 35 feet with 3 elbows
 - e. 25 feet with 4 elbows

The most stringent allowance by these major manufacturer's permits twice the distance of that permitted by the main body text of Section 1501.3. All the above distances are currently allowed by exception # 2 of Section 1501.3 of the IRC. These distances are extremely reasonable for today's construction layouts. In addition, the code also permits the use of dryers that take advantage of condensing technology, which includes no exhaust system whatsoever. The code also makes provisions for unique scenarios that cannot comply with the lengths listed in this section, and for users that prefer not to utilize condensing technology. The installer has the option to demonstrate that the spirit and intent of the code requirements have been met in their alternate design in accordance with Section R 104.11. These are all the options available for clothes dryer exhaust to maintain the minimum safety standards the code is designed to provide. There is absolutely no justification for the blanket approval that permits these in line fans wherever someone feels "common safe installation practices" are just too cumbersome. The code provides plenty of safe options relating to clothes dryer exhaust that do not require the additional cost, labor, and maintenance issues associated with fans.

It is not practical or safe for the code to contain provisions for something that is not possible and for which technology does not exist. Section 1501.3-exception # 1 is impossible to comply with. Two nationally recognized testing labs have stated they do not have a listing for "clothes dryer booster fans". It appears that fan manufacturers are simply obtaining a listing for an in-line duct fan, and indicating in their sales information that use as a dryer booster fan is within the stated listing of such fan. This is a gross misunderstanding and misapplication of the code and the listing process. These installations are being permitted because of confusion relating to this code section. Some major safety issues are being totally ignored. There are no interlock requirements; in fact one manufacturer promotes their fan as "mindful of your energy use, turning the fan off and on, in ten minute cycles, only while the dryer is running". What is happening with the dryer exhaust during the 10 minutes that the booster fan is in the off mode?? With out an interlock the dryer does not know if the booster fan is working. Exhausters and combustion air fans are required to have interlocks with the appliances they serve. These fans offer no information for make up air, but can operate at rates of up to 190 cfm. One model mounts on the exterior of structures and according to the manufacturer, "address every situation". This particular fan has a housing as part of its permanent construction that incorporates a slotted louvered termination point! This is clearly a code violation, because the code states screens are not allowed! These fans have not been tested at elevated temperatures with debris in the air stream. Clothes dryer exhaust is an airflow that contains moisture and debris at elevated temperatures!! No testing has been done that simulates these clothes dryer exhaust conditions.

It is common knowledge that the average homeowner does not routinely clean their clothes dryer exhaust duct, therefore, it is not uncommon for fires to occur related to improper maintenance of such systems. So now, what the code allows is even more equipment including electric components to be ignored until fire occurs. This current code provision could be dangerous and by the time statistics are available it may be too late. This technology has just not yet evolved to the safety level the code strives to prescribe. This has created a false sense of security for the homeowners who think they have a home with all of the minimum life safety features that the code provides.

Cost Impact: None

Committee Action: **Disapproved**

Committee Reason: Clothes dryer booster fans provide a needed option for problem installations. No evidence was provided that the booster fans already in use in the field have caused problems.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Guy Tomberlin, Fairfax County, VA, representing VPMIA/VBCOA, requests Approval as Submitted.

Commenter's Reason: The committee comments were that these fans are a needed alternative and we did not provide documentation of any existing failures. One major reason there are not any documented failures (yet) is that most localities are enforcing the code and they recognize the flaws we have repeatedly pointed out. It is impossible to install a residential clothes dryer booster fan and comply with the current IRC text as written. If these fan installations are occurring in your area, they are a gross misapplication and violation of the fans actual listing. Two nationally recognized testing laboratories have provided information that they have specifically not listed any fans as "clothes dryer booster fans" and are not aware of any such device listing. If such listing or listed products do not exist, then how are installations being performed within the guides of "as installed per the listing and labeling"? This is what the current code text requires. Industry recognizes all the shortcomings that have been identified and

they have even formed a working group, almost two years ago, and have done nothing towards improving this issue. They admit all points are valid but still do nothing. There is no interlock requirement to assure fan operation during dryer operation; in fact, they perform just the opposite! Some of these fans intermittently turn off for energy savings! There are no provisions to mandate access to these excessively long duct systems for inspection and maintenance. The best alternative is to approve this final action comment and let industry work towards a safe fix. For example, the research we have seen indicates that 5 major brands of dryers allow duct system lengths at LEAST 4 times longer than what the main text in this section allows. These longer duct distances are currently permitted because they comply with current exception number 2!! This is the reasonable approach as opposed to promoting misapplication of fan installations. The IRC committee created a large conflict in the code when they approved this item. The IMC committee disapproved this very same item. The conflict this new section created is that all equipment must be listed and labeled per Section M1302.1, and installed per such listing. This includes the actual clothes dryer itself. See Section R102.4 Referenced codes and standards. This is exactly what this section was written for. The installation of a booster fan on a listed clothes dryer exhaust system is a violation of the clothes dryer listing and the fan listing. No clothes dryer manufacturers have incorporated these fans into their listing.

No listing includes the requirements for installing these fans on another manufacturer's listed clothes dryer exhaust system. In the event of an exhaust duct fire, who will be responsible, the dryer manufacturer or the booster fan manufacturer or the code official for approving the installation? These systems need to be approved in accordance with Section R104.11 Alternative materials, design and methods of construction and equipment, on a case-by-case basis, not a blanket approval. Taking advantage of the other exception to this section will give the designers and installers the relief necessary for a custom installation that exceeds 25 feet, using the dryer manufacturer's installation recommendations! The label issue is unenforceable and completely useless. How will it be permanent? Who will ever see it 6 to 8 inches off the floor, behind a dryer where the duct enters the wall? If a homeowner happens to see it, will they know what it means? This is the opportunity to correct a huge conflict with the code. This exception is beyond the guidelines of good practice, stated in the purpose of this code, Section R101.3. A new home buyer should not have to worry about any unnecessary mechanical failures, labels, access for these fans, inaccessibility to excessive duct runs and other situations caused by these fans, when the code already offers alternatives at a far less cost and potential hazard.

Approve this final action and we will avoid the potential to ever see the documentation of failures the industry claims they need to see.

